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ABSTRACT

Research adaptation is an endeavor that implies solid collaboration among school practitioners and university and college researchers. This volume addresses the broad issues of research as an educational endeavor, adaptation as a necessary function associated with applying research findings to school situations, and change as an inevitable phenomenon as well as a positive consequence of research adaptation and practical application. Articles develop the concepts inherent in the collaborative effort and provide some practical insights based on experience in efforts to merge research adaptation and educational change. Sections concerning the credibility and collaboration of research, adaptation and educational change, concepts and ideology of change, and planning and assisting change include articles on: (1) the quest for scientific and practical credibility of educational research; (2) collaborative action research; (3) the social and political context in which some research projects operate; (4) research adaptation as a change process; (5) the aura of change; (6) analyses of change ideologies; (7) change models as a framework for project evaluation; and (8) technical assistance. (CJ)

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# Research, Adaptation, & Change

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## Teacher Corps Research Cluster

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# Research, Adaptation, & Change

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# Preface

In its previous publications, the Research Adaptation Cluster addressed the problems of evaluation with respect to effective conduct of research-based projects (Dick, 1976), aspects of demonstration as they relate to project operation (Acheson, et al., 1977), and the relation of research adaptation projects to projects concerned with staff development (Morris, et al., 1979). This volume addresses the broad issues of research as an educational endeavor, adaptation as a necessary function associated with applying research findings to school situations, and change as an inevitable phenomenon as well as a hoped-for, positive consequence of research adaptation and practical application.

The experience of the projects in the Cluster and synthesis of their findings should be informative for today's Teacher Corps five-year projects and also for other educational projects which aim to improve school practices.

Teacher Corps has a broad range of concerns associated with improving school climate, enhancing staff development, institutionalizing (making sure that successful practices are continued) and disseminating programs that enrich the education of all children, especially those from low-income families. This requires the combined efforts of community schools and institutions that educate teachers. Research adaptation is an endeavor which implies solid collaboration among school practitioners and university or college researchers. The chapters which follow develop the concepts inherent in the implications of that collaborative effort and provide some practical insights based on first-hand experience in efforts merging research adaptation and educational change.

Borrowing from the jargon on educational evaluation the experience and the documentation of the Research Adaptation Cluster experiment have been "formative," not "summative." One may expect that the lessons learned so far will be built upon in the future and that the activities called the research adaptation "thrust" in 1975, which later became a "framework," and then a "cluster" will be continued and refined.

This publication is the last of a series which Lee Morris and his colleagues conceived and initated nearly six years ago. The activities of the Cluster represent, we feel, a unique contribution to federal efforts to improve teacher education programs across the nation. The goal was simple: to provide leadership within the Teacher Corps projects with the time, the opportunity, and the professional challenge necessary to integrate research and practice in their own

very important and unique daily work. Modest resources from Washington provided the time and the opportunity but it was the group of individuals themselves— practitioners selected from the national network of Teacher Corps projects—who provided for each other the professional challenge.

The countless meetings, exchanges of points of view and submission and resubmission of papers eventually led to the acceptance of a legitimate collegial review process. It was legitimate in the sense of ownership which each individual had in the productions of the entire group. It was legitimate in the rigor with which conflicting views were considered and respected, and it was legitimate in the norms of behavior which the group established for its members.

Teacher Corps' goal includes the improvement of classroom teaching in schools in the low-income areas of this nation. This is a lofty aspiration which can be approached only through a number of parallel but related strategies. For Teacher Corps the adaptation of the wisdom gained from education and other research, to the wisdom necessary today for effective classroom teaching provide a model for such a relationship. The Research Adaptation Cluster has struggled with this endeavor as have other organizations. We do feel, however, that the dual role which the contributors to this volume occupy—researchers and practitioners—gives them considerable credibility as "bridgers" of the gap between research and school improvement.

Teacher Corps feels this volume will be of considerable interest to school and college people associated with this project as well as to the teacher education community at large. Lee Morris and Susan Scull and their colleagues are to be commended for preparing this major contribution to the literature on the adaptation of research to the improvement of teacher education.

Teacher Corps has profited from the work of the Research Adaptation Cluster. It has provided us with some challenging perspectives on the rationale of such a federal intervention strategy. As such, the work of the Cluster will be missed. Personally, we have valued it and will miss the high sense of professional responsibility which members of the Cluster have always exhibited to each other and to us.

*James S. Steffensen*
*Haroldie Spriggs*

# Educational Research: The Quest for Scientific and Practical Credibility

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Educational research is, by and large, a 20th century phenomenon. The application of scientific principles and attitudes to education parallels the development of education as a profession, with the most explosive growth the last 25 years. This recent emphasis on educational research was signaled by the passage of the Cooperative Research Act in 1954 which sought "to improve education at every level and in every subject area through educational research, development, demonstration and dissemination activities (Clifford, 1973)." The establishment of the National Institute of Education in 1970 generated new momentum in educational research; and federal funding of research and development has mushroomed. Regional research laboratories, as well as major research institutes, on teaching, reading, and vocational education, have emerged making a vigorous renewal of research.

The assumption underlying recent research expenditures reflects the 1954 desire to improve education at every level. While scientific investigation of teaching, learning and child development originally had a variety of goals, the role of research as a tool for change has become predominant. Some researchers still call for caution and argue that the primary goal of research is to produce knowledge and theory to explain and understand phenomena (Jackson & Kiesler, 1977; Kerlinger, 1977; Tyler, 1978). Nevertheless, public monies are entrusted to the research community to enable all children to learn to read, to compute, to write in a literate manner, to support themselves and be useful members of society.

Such expectations are logical results of not only the American faith in scientific knowledge but also of the predominance of pragmatism, and the ongoing spirit of reform. While pragmatism may not dominate today's philosophy, its tradition greatly affects our views of research. James (1961) explained the pragmatic method as an attempt to " interpret each notion by tracing its respective practical consequences....To attain perfect clearness in our thoughts of an object, then, we need only consider what conceivable effects of a

practical kind the object may involve." Pragmatic considerations are typically embedded in fact, and are consistent with 19th century faith in science and technology. Although pragmatists are often criticized as anti-intellectual, pragmatic concerns still shape American attitudes.

The development of pragmatism coincided with an age of reform which lasted from about 1890 to World War II. Populism, progressivism, the New Deal answers to the depression—these movements all emphasized change, results, improvement in society and the welfare of the individual. Society's goals for educational research are in keeping with this philosophy.

However, even though society expects research to produce concrete changes in schooling, its expectations occur in a time of pervasive skepticism. 1980 is post-Watergate, post-Vietnam, post-civil rights revolution, post-ugly American. Many of the great American dreams and traditions have been questioned and often found lacking. Facts are seen as relative. Data can be interpreted many ways. Scholarly reports are ignored, or seen as intellectual games.

The research issue is complex. Practitioners, scholars and society in general expect research efforts to lead to significant improvements in schools. And yet, at the same time, teachers, administrators and program planners are not aware of the findings from research and, if cognizant of them, are skeptical of their applicability. Researchers question the quality of work being done, the increase in the number of one-study research "careers," and reliance upon traditional natural science methodology. Educational research, then, lacks some credibility with both the scientific research community and practitioners in the schools; and correspondingly, there is a lack of trust and cooperation between the researchers and the practitioners themselves.

This chapter discusses the nature of the research process within the context of the quest for credibility. Four major issues related to research credibility are: the credibility of the research orientation; methodological credibility; the credibility of the research topic; and dissemination of findings and its effects upon credibility.

This chapter assumes that research should produce ultimate change in schooling. While the assumption may be debatable, it is, nevertheless what society ultimately expects from the research community.

## THE CREDIBILITY OF THE RESEARCH ORIENTATION

Research has been divided into two fundamental orientations,

theoretical and practical (Schubert, 1980). Theoretical approaches are used to identify generalizable conclusions. The practical orientation concerns itself with the resolution of specific problems. Within the context of traditional research categories, both basic and applied research have a theoretical orientation; action research has a practical orientation. These distinctions determine many dimensions of research orientation credibility; but it is an oversimplification to state researchers trust theoretical approaches, while practitioners trust practical approaches.

*Theoretical Research Orientation*

Much has been written on the basic-applied research distinctions. Shaver (1979) summarizes the two approaches. Basic scientific research attempts to generate knowledge and theory. The researcher is not primarily concerned with practical consequences or moral implications. On the other hand, applied research seeks to explain and understand teaching and education. "Here validity of practices is tested with the hope that results will be generalizable beyond the specific setting of the study and sometimes, even directly applicable to theory building" (p.4).

The Committee on Educational Research of the National Academy of Education describes the basic-applied research categories as conclusion-oriented inquiry and decision-oriented inquiry. The distinction removes the emphasis in the "basic" concept of adding to scientific knowledge (Begle & Gibb, 1980). Using the term "decision-oriented" for applied research emphasizes the practical role, but it should not be confused with action research.

Both basic and applied educational research have implications for classroom change. Kerlinger (1977) indicates that because basic research is *not* tied to a particular problem situation, it will ultimately have far-reaching effects. The results can be generalized to a wide range of situations. He cites the field of reading as an example:

> *Answers to reading problems lie not in many researches aimed at telling teachers how to teach reading. They lie in research aimed at understanding the many aspects of human learning and teaching connected with reading.... We must study reading in the context of perception, motivation, attitudes, values, intelligence, and so on.* (p. 7)

Extending this approach, applied research has, by definition, a more limited impact. Findings would apply to elementary classrooms, or perhaps to an even more limited setting, such as urban

lower elementary teaching situations. This is not to say, however, that applied research is less useful; the role is different. For example, one instance of applied research (to extend the reading example) would be to test a method of teaching reading. The research would tell something about this method, but, in addition, if the research were properly drawn from a theory, the findings could also test the theory itself. Shaver (1979) suggests that applied research findings:

> *...do, at the least, suggest boundaries of generalizations....The delimitation of applicability can be as important as theory confirmation to those who want to use research evidence to make decisions about practice in the schools.* (p.5)

Begle and Gibb (1980) summarize Hilgard's discussion of the relevance of basic and applied research in Figure 1 showing a range of pure or basic research topics and their progression of relevance for the classroom teacher. The technological research, or applied research, moves from laboratory testing of classroom applications to the adoption of research findings which have already been "translated" into immediately usable forms. The importance of this translation has been noted by many (Lancaster & Smith, 1978; Singer, 1970; Stank, 1978). It, however, is *not* a research process, but a followup to research; it is development and dissemination.

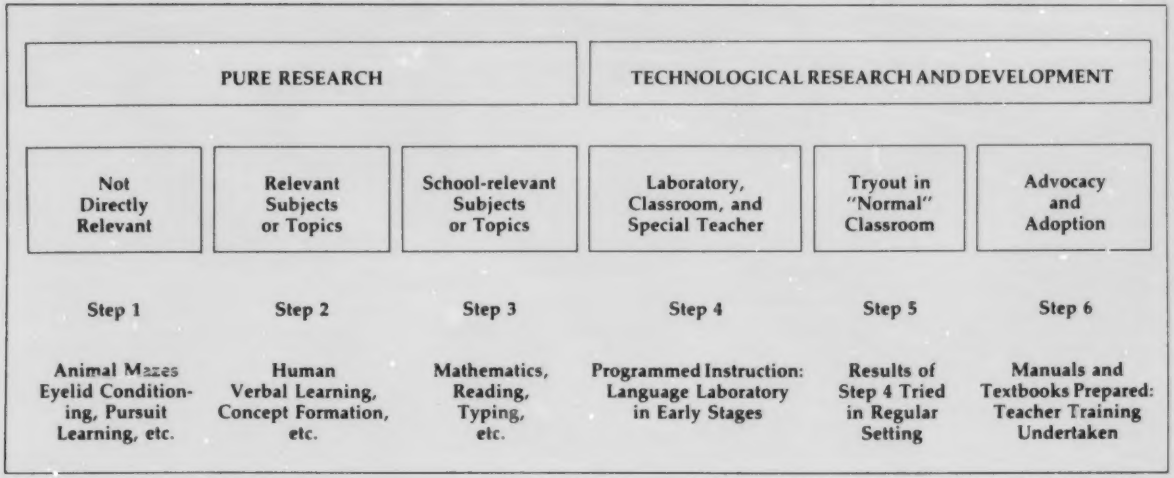
Begle and Gibb's continuum clearly shows a range of types of research within the basic-applied categories. Each type, however, is still within the theoretical classification; the approach is one of finding generalizations about all teaching and learning situations. They both represent a scientific approach to the study of educational problems. The basic-applied research controversy is largely one with little practitioner involvement.

*Practical Research Orientation*

Practical research has its roots in the context of the problem situation. Schubert (1980) summarizes Schwab's concept of this orientation. Of primary importance is the rejection of knowledge creation and generalization as an end product. Rather, the ends of practical research are "situationally specific decisions and action" (p.18). Problems are seen as specific events, and to study such problems one must often become involved and experience them.

Practical research is closely related to action research, which has the goal of solving immediate problems which occur in a school.

Figure 1. Steps in Research on Learning—Pure Research to Technological Development


PURE RESEARCH
TECHNOLOGICAL RESEARCH AND DEVELOPMENT
Not Directly Relevant
Relevant Subjects or Topics
School-relevant Subjects or Topics
Laboratory, Classroom, and Special Teacher
Tryout in "Normal" Classroom
Advocacy and Adoption
Step 1
Step 2
Step 3
Step 4
Step 5
Step 6
Animal Mazes Eyelid Conditioning, Pursuit Learning, etc.
Human Verbal Learning, Concept Formation, etc.
Mathematics, Reading, Typing, etc.
Programmed Instruction: Language Laboratory in Early Stages
Results of Step 4 Tried in Regular Setting
Manuals and Textbooks Prepared: Teacher Training Undertaken

> *In contrast to "fundamental research," which is concerned with the derivation of generalizations of wide applicability, action research is undertaken to act as a guide in the solution of an immediate practical problem. It is willing to forego scientific rigor in its primary concern for a usable answer to a problem existing here and now; making a contribution to the development of education as a science is generally a minor consideration* (Mouly, 1969, p. 1150).

Action research emphasizes teacher participation in the research process.

Schwab would reject action research as truly p actical because of its use of quantifiable techniques, and willingness to generalize when possible (Schubert, 1980). However, the point seems to be an insignificant distinction since the primary goals and often techniques are the same.

Strike's (1979) Model of Practical Reasoning provides another example of a research orientation which can be categorized by the Schwabian term "practical research." "A central commitment of the model is that research in practical areas is not atheoretical" (p. 13). This model includes three major components:

1. *The theoretical-normative hard core:* A systematically interrelated set of norms and empirical theories which describe a successful situation.
2. *Plans of action:* Strategies for creating situations in the real world which duplicate those situations described in the theoretical-normative hard core.
3. *Outcomes:* The results of implementing a plan of action. The data are used to evaluate the adequacy of the plan.

Again, this research orientation emphasizes solving problems in specific situations. There is no attempt to create a data base which would extend to problem-solving in other situations.

*Establishing Credibility*

The sources of concern for both researcher and practitioner are obvious. Practitioners, confronted with daily problems and pressures, seek direct help from research. Basic research findings and even topics do not provide specific guidelines for effective teaching and learning. Even applied research findings may appear to deal with variables defined in such a controlled fashion that they offer little concrete advice for the more complex behavior of students.

Researchers doubt the results of action research based upon often questionable scientific method. In addition, they question the use of

identifying effective practice through a myriad of studies which are specific to each new situation.

Without forcing oneself to make a choice between the variety of research orientations, a number of questions need to be answered:

1. What does existing data say regarding the generality of research findings in diverse settings?
2. What is the role of research adaptation as opposed to conducting original research?
3. Which orientations have led to past improvement in the schools?

First, the generality of research findings. Before research can be approached for establishing generalizations, it seems appropriate to determine if past results, have, in fact, been generalizable to a variety of situations. Educational settings vary in a large number of ways in terms of differences in subject matter, grade level, locale, school climate characteristics, student characteristics, and teacher characteristics. Is it not possible that there are findings which can apply to many situations? Gage (1979) analyzed research on teaching studies to answer this question. His findings support both positive and negative responses. In some studies, results were consistent across variables such as subject matter and grade level. In other cases, there was a variation in process-product relationships among similar variables. Gage concludes:

> *Overall, the empirical findings seem to favor some degree of both specificity and generality. The findings are not yet abundant enough to support firm conclusions, but they suggest that, when more adequate evidence becomes available, the resulting picture will not be either completely general or completely specific.* (p.278)

He then suggests a hierarchical model of the structure of dimensions related to teaching effectiveness. By using subsequent data the hierarchy can be validated to identify those variables which are generalizable, and those which are situation-specific. The hierarchical model would provide some logical guidelines for determining a research orientation which has both scientifc and practical credibility.

Next, is the consideration of research adaptation. Perhaps the choice need not be one of conducting new situation-specific research to establish practitioner credibility. Emphasis could be put on local adaptation of previous research findings. In many respects, the Strike model of practical reasoning is a research adaptation model rather than an orientation to original research. Various

approaches to research adaptation have been documented in *Adapting Educational Research: Staff Development Approaches* by Lee Morris et al. (1979). This describes actual situations in which research findings have been adapted and incorporated into school programs to solve specific problems. Research adaptation frequently includes a major program evaluation component as in the Strike model. It is a useful technique for answering again the question of the relevance of generalizability at the same time one is solving local problems.

Finally, can history teach us a lesson? Because of the traditional use of a theoretical research orientation, there is evidence of the usefulness of both basic and applied research as tools for change (Russell, 1961; Slavin, 1978). In most cases, however, the application of research findings in the typical classroom takes a great deal of time. In 1921, W.L. Thorndike said he expected a usual lag of 30 to 50 years before some of his most significant discoveries would be implemented (Clifford, 1973).

Little has actually been reported on the use of practical research techniques. However, by definition alone it seems logical to support its use. Furthermore, as noted by Schubert (1980), typically the criteria used to evaluate practical research have evolved from a traditional empirical orientation; therefore, resulting criticism may not be warranted.

The credibility of a particular research orientation is clouded by one's past experiences, but it is also influenced by methodological issues. Sound methodology establishes scientific credibility, and even though practitioners are not typically concerned with such issues, an overemphasis on methodology by researchers does influence the manner in which research results are received by practitioners.

## THE CREDIBILITY OF METHODOLOGY

Methodological issues are at the heart of the credibility problem from a scientific point of view. However, one's position in relation to methodology depends primarily on philosophical orientation. The two key approaches are the traditional experimental orientation and the naturalistic orientation.

Traditional experimental research relies upon the design of carefully controlled situations which test a theory or hypothesis. Extraneous variables are controlled so that one can isolate the effects of the variable(s) being studied. Experimental groups, control groups, specially designed treatments and statistical analyses of resulting

data characterize the classic approach to research referred to as "traditional experimental" in this chapter.

Naturalistic research, on the other hand, also relies on facts, data gathering, and rigorous methodology. It includes a variety of techniques:

> *....all of which are concerned, at base, with the ecological validity of research findings. These include: ethnographic techniques, quasi-representative research design, ecological psychology, and environmental psychology.* (Carey, 1980, p. 412).

All of these approaches derive from the belief that it is critical that psychological events be studied in natural settings, often with an emphasis on the use of participant observation (Wilson, 1977).

This section describes the philosophic roots of each of these methodological orientations, identifies major credibility questions, and suggests approaches to reestablish methodological credibility. While the issues are discussed in terms of experimental-naturalistic differences, the distinctions should not be viewed as a dichotomy.

Both traditional experimental and naturalistic methods come from an empirical framework. The primary ingredient of empiricism is "a respect for the data of experience and the application of reason to them " (Cohen, 1955, p.85). Empiricists value observation, experiments, and analysis of fact in an effort to understand nature and her laws. Beyond this very basic belief, however, there is a split in the philosophical orientations from which these two methodological approaches emerge.

*Philosophic Roots of Traditional Experimental Methodology*

Traditional experimental methods are consistent with positivism which has been described (Adorno, Albert, Dahrendorf, Habermas, Pilot & Popper, 1976) as having three basic tenets:

1. the notion of a single scientific method to be used for all subject matter;
2. the use of mathematical physics as a methodological ideal; and,
3. the identification of causal explanations of specific situations in terms of general laws.

While many researchers criticize the merits of positivism, it nevertheless still greatly influences traditional experimental research. Positivism is rooted in a strict definition of causality and a belief in the uniformity of nature.

Research methodologies all are based upon some concept of causality which is central to any approach. The traditional experimental/positivist position on causality is consistent with that of David Hume (Broudy, et al. Eds., 1973):

> *But when one particular species of event has always, in all instances, been conjoined with another, we make no longer any scruple of foretelling one upon the appearance of the other, and of employing that reasoning which can alone assure us of any matter of fact or existence. We then call the one object cause; the other effect. We suppose that there is some connection between them; some power in the one, by which it infallibly produces the other, and operates with the greatest certainty and strongest necessity.* (p. 405)

Here there is no distinction between connection and cause if relationships are observed repeatedly.

The belief in such a notion of causality is consistent with a view of nature as orderly and uniform. John Stuart Mill (1846) said, "there are such things in nature as parallel cases; that what happens once, will, under sufficient degree of similarity of circumstances, happen again, and not only again, but always" (p.184).

Bertrand Russell (1973) relates the belief in the uniformity of nature to the reliance upon the existence of general laws:

> *The uniformity of nature does not assert the trivial principle "same cause, same effect," but the principle of the permanence of laws. That is to say, when a law exhibiting, e.g., an acceleration as a function of the configuration has been found to hold throughout the observable past, it is expected that it will continue to hold in the future, or that, if it does not itself hold, there is some other law, agreeing with the supposed law as regards the past, which will hold for the future.* (p.411)

His point of view relates back to the positivist roots of traditional experimental design. However, these views also relate to the primary goal of theoretical (basic and applied) educational research, the production of generalizations about the teaching and learning processes.

*Philosophic Roots of Naturalistic Methodology*

What then are the philosophic roots of naturalistic research? Naturalistic research is essentially empirical; however, the applications of empirical methodology are based upon very different concepts of nature, and of cause.

Naturalistic philosophies seem to be consistent with Max Weber's

notion of *verstehen*, the nature of understanding. Strike (1972) defines the Weber concept and typical objections:

> *The advocate of some version of the* verstehen *doctrine will claim that human beings can be understood in a manner that other objects of study cannot. Men have purposes and emotions, they make plans, construct cultures, and hold certain values, and their behavior is influenced by such values, plans, and purposes. In short, a human being lives in a world which has "meaning" to him, and because his behavior has meaning, human actions are intelligible in ways that the behavior of nonhuman objects is not. The opponents of this view, on the other hand, will maintain that human behavior is to be explained in the same manner as is the behavior of other objects in nature. There are laws governing human behavior. An action is explained when it can be subsumed under some such law, and, of course, such laws, are confirmed by empirical evidence.* (p.28)

Weber's views are based on the notion of having *reasons* for one's actions as opposed to *causes*. Hence, there is often a conflict with the traditional experimentalist (or the radical empiricist, to use Strike's words) who is:

> *...inclined to discuss any explanatory scheme employing mental states on the grounds that at best such states must be inferred from behavior and at worst, they are entirely incapable of empirical identification.* (Strike, 1972, p.37)

This alternative approach to causation is also central to the naturalistic research orientation. Davidson (1973) argues that the primary reason for action is its cause, and typically primary reasons consist of beliefs and attitudes. Extending this position, one can conclude that while laws are involved in causal explanations, they are not related to rationalization. Using this philosophical basis, the identification of laws and generalizations is not a comprehensive approach to explaining and understanding all phenomena.

Scriven (1973) further explores causality by stating that a cause is context-dependent. A cause (or reason, or explanation) of an action can only be determined by analyzing the situation in which the action occurred.

The traditional experimentalists would at first agree that the identification of a law depends upon the conditions under which the situation occurs. However, the naturalist seeking reasons, as well as behavioral causes, would say the context becomes the source of study and all contexts are different; therefore, general conditions

cannot be identified which determine laws governing behavior in all settings.

*Methodological Credibility Issues*

The previous discussion highlights the basis of many methodological disputes among researchers. However, there are specific issues which can be traced to the philosophic conflicts, even though the growing lack of scientific credibility is, in general, a technical consideration. Four technical issues will be described. Three relate to traditional experimental research, and one, to naturalistic methodology. Currently, it seems that more problems center on traditional educational research.

First, the issue of the context-stripping attributes of traditional experimental methodology, an issue which Elliot Mishler (1979) has fully developed. His work forms the basis of this discussion. The underlying reason for the problem of context stripping resides in the observation that human action and experience is context-dependent and yet general laws must be "context independent, free of the specific constraints of any particular context and therefore applicable to all" (p.2).

Mishler describes the peculiar methodological practices traditional researchers employ to identify these general laws:

> *Context stripping is a key feature of our standard methods of experimental design, measurement, and statistical analysis. To test the generality of our hypothesis, we remove the subjects of our studies from their natural social settings; their normal roles and social networks are left behind as they enter our experimental laboratories, much as we leave our shoes outside on entering a shrine. To meet the assumptions of statistical tests, subjects are then randomly assigned to different experimental treatments, as if they were interchangeable as the seeds of different strains of corn or alfalfa. This experimental paradigm also serves as the ideal model for various types of non-experimental research, including sample surveys and field studies of such social organizations as schools....Further, we have developed methods of measurement that depend upon the same assumptions. Our procedures are aimed at isolating variables from the personal and social contexts in which they operate. Through factor analysis and scaling procedures, we search for pure variables, for measures of unitary dimensions that will not be contaminated by other variables. Ideal measures are independent, free-standing, orthogonal — that is, unrelated to measures of other variables.* (pp.2-3)

Although such methodological issues have traditionally been of concern only to researchers, the notion of context stripping is central to the often heard practitioner complaints regarding research's lack of relevance. Ianni (1977) voices the same concerns about the ability to apply research findings from controlled settings to actual classrooms.

This concern reflects far more than a lack of communication between teachers and researchers; the issue raises the question as to the technical feasibility of applying the results of traditional research to solve problems of schooling. It is similar to the question regarding the generalizability of findings across situations.

The second issue relates to the credibility of statistical significance testing. Research findings are typically presented as significant or non-significant depending upon statistical analysis. Carver (1978) summarizes the growing number of objections to this respected procedure. Both Carver and Glass (1976) have emphasized major problems related to sample size and significance testing. On the one hand, Carver (1978) describes significance testing as a methodological defense against the use of very small samples. Inherent in this approach is a doubt as to the credibility of generalizations which might emerge from small sample studies. This is especially true when the classroom is the unit of the analysis, again typically requiring a very small sample. Glass (1976) on the other hand, cites the danger of statistical significance occurring more often with large sample studies; thus, it is often possible for relatively weak findings to appear significant while more educationally significant results are lost because of a small sample design.

Other researchers have suggested that the use of inferential statistics may not be the best way to establish such external validity (i.e., the generalizability of findings). Replication of research may make more sense (Carver, 1978; Shaver, 1979; Shaver & Norton, 1980). If the same results occur during repeated studies with different populations, the entire process of statistical significance testing becomes unnecessary.

The third issue related to the credibility of traditional experimental research methodology is the question of randomization. The use of inferential statistics assumes a random sampling of subjects and a random assignment of those subjects to treatment groups when pertinent. Without such use of randomness there is no logical basis for generalizing the research findings to other populations (Shaver & Norton, 1980; Tatsouka, 1969).

Many researchers have questioned the actual use of random sampling and assignment. Shaver and Norton (1980) in analyzing 151

selected studies from ten years of research reports from the *American Educational Research Journal* found:

(a) 32 percent of the studies defined the target population; and only 8 percent described the accessible population;
(b) 19 percent of the studies used random sampling techniques;
(c) 35 percent of the studies were experimental with random assignment to treatment (53 percent of the studies were correlational); and
(d) 14 percent of the studies involved either direct or systematic replication.

These results question the extent to which current educational research can, in fact, make general data-based statements to practitioners. The increasing lack of faith in traditional statistical procedures by some researchers again leads to the possibility:

> *...that general laws, such as physical scientists have been so successful in establishing, may not be demonstrable in education....The argument is not that human behavior is unlawful, but that social phenomena are not, and cannot be, isolated in the same sense as physical ones.* (Shaver & Norton, 1980, p. 14)

The power of such arguments has led many to turn to naturalistic methods of research. This, however, is becoming a trite, trendy response, and many researchers lack the substantive skills to conduct such studies. Advocates are beginning to caution others of the danger of oversimplifying naturalistic processes (Ianni, 1977; Rist, 1980). Here, too, credibility is threatened:

> *...participant observations usually stress the observation to the exclusion of the participant role and in many cases there is no clear definition of what is being observed, how it is to be recorded, and to what end this is all being done.*
> *The use of untrained participant observers, who have no grounding in theory and who have not learned the difference between looking at and looking for, has created problems.* (Ianni, 1977, p.5)

As such, a major problem with naturalistic methodology in education is that the profession has not built a background of trained personnel. Educators are again borrowing methodologies, this time from anthropology and sociology, and the application to educational problems is not always appropriately made.

*Establishing Credibility*

The task of establishing methodological credibility should draw from the two major philosophic orientations. It is possible to take both traditional experimental and naturalistic paths to establishing credibility.

If naturalistic methodologies are used, credibility will come only with rigorous application of procedures. Many are looking to ethnographic techniques as a way to gather more meaningful data about schools and teaching/learning situations. Wilson (1977) has summarized ethnographic processes based on a long-term data collection by a participant observer. The steps include:

(a) establishing the observer's role as clearly as part of the setting, but not belonging to any one group;
(b) collecting relevant data, such as: verbal interaction between participants and between participants and observer, nonverbal behavior, action patterns, records , documents, and artifacts;
(c) record experiences using "disciplined subjectivity" (p.258);
(d) analyze data by comparing it to a variety of theories regarding the situation.

It will take time not only for educators to become skilled in this type of research, but, in addition, ethnographic principles need to be adapted to unique educational problems. One unique attempt to do just this is Ianni's (1977) description of the training and use of "native informants" in which teachers and students were trained and used as primary gatherers and reporters of data.

Reports of ethnographic studies and other naturalistic research must gain an academic and scholarly respectability within the field of education. Such respectability will be promoted by frequent examples of quality work which should be made available or summarized for popular distribution among practitioners. If conclusions are situation-specific, teachers and administrators could view this research as part of the "real world," thus establishing feelings of relevance.

However, credibility can also be established using more traditional approaches. Much of research's lack of practical credibility comes from the many conflicting results. As more studies are conducted, more conflicting results are reported. Not only is it confusing to the practitioner, but it's difficult for the researcher to keep abreast of the work being done. As Glass (1976) noted:

*As educational researchers, we find ourselves in the mildly embarrassing position of knowing less than we have proven.*(p.8)

Glass has devised one approach to integrate findings from studies on a similar topic to draw larger conclusions than is possible from any single study. He calls this technique meta-analysis which is a rigorous statistical analysis of the reported findings of other studies. It does not deal with original data (unlike secondary analysis), and it is possible to use data from studies which may have methodological difficulties. His work has shown that poorly designed studies can still yield educationally, if not statistically, significant results. And educators are losing a tremendous amount of powerful data by ignoring such studies. Taken together, the whole can reveal more than the sum of its parts; we can know more than we think.

Other experimental techniques are also being used which emphasize the unique characteristics of each situation. One example is the use of anecdotal classroom observation procedures, as opposed to categorical systems. With anecdotal systems the trained observer records what is seen rather than looking for instances of behavior which are part of pre-defined hypotheses or theories. Anecdotal systems allow the hypotheses to grow out of the data and are similar to the ethnographic situational analysis stages which identify theories during observations.

The entire methodology question, while posing real concerns for researchers, also creates major distractions for practitioners. Methodology discussions, to some, avoid the larger and more important examinations of educational problems, by narrowing the problem's initial conceptualization (Kemmis & Grotelveschen, 1977). From the practical point of view this can detract from the credibility of the research topic itself.

## THE CREDIBILITY OF THE RESEARCH TOPIC

### *Values, The Topic, and Change*

From a purely practical point of view, the initial selection of the research topic creates a major set which determines the potential of the findings to affect change in the schools. If the topic lacks credibility, the findings will not even be read. The most influential research in recent history has been research which concentrated on the most critical problems of the day (Clifford, 1973; Russell, 1961; Singer, 1970). In other words, the topics were relevant.

Defining relevant problems, however, is a complex task laden

with personal values; the question is always, relevant to whom? Strike (1979) has said:

> *...human problems are rooted in a kind of theory. Situations do not become problems unless we approach them with values which specify what properties these situations* ought *to have...our ideologies turn events into problems, and...tell us what human needs are....* (p.10)

The interaction between research problems and social values has major implications which define the extent to which research results will be used in the classroom. For example, the bulk of research indicates class size makes little difference in student achievement. Since these findings do not verify popular theories, the results are largely ignored. After an extensive examination of the impact of research, Clifford (1973) concluded that:

> *Application of, or deference to, research depends less upon its quality or completeness than upon such social and ideological factors...upon the* zeitgeist *of education and society.* (p.37)

Chall (1967) notes the lack of impact of studies whose findings were contrary to "conventional wisdom." But, the notion of research as only a device which tells society it was right in the first place is contrary to all tenets of scholarship. Button (1977) said, "Put most broadly, it (research) should not only serve conventional wisdom, but supplement it" (p.246).

Thus, research reasserts its original purpose of improving the schools, a goal which becomes most difficult to achieve if the changes can come only through those who were fundamentally in agreement with findings originally. Reasserting an advocacy position is hardly a demonstration of the influence of research findings.

How then can research topics be selected which will establish the credibility required to create some potential for affecting schooling? How can topics be selected which are consistent with societal values, and yet still generate knowledge about the ways schools should change?

*Establishing Credibility*

> *The discontent with educational research seems to stem more from lack of attention to the "educational" than from the attention to "research."* (Kemmis & Grotelveschen, 1977, p.48)

The average practitioner often uses the issues of research orientation and methodology as a way of avoiding the central problems in the field. Gowin (1972) classified these problems in terms of: social setting, concept of education, the educative process, subject matter content, context of inquiry, and the persons. For the practitioner such elements encompass the major problems of education. The difficulty is that much of the current research does not focus on distinctively educational topics (Gowin, 1972; Kemmis & Grotelveschen, 1977). Instead, educational researchers seem to be borrowing topics from other disciplines, such as sociology and psychology. This position does not automatically force the researchers to turn from a basic to an applied research orientation, but it does caution the more theoretical researchers to select topics with as direct a link as possible to actual teaching/learning situations.

One frequent suggestion is for researchers to involve practitioners in topic selection. These collaborative relationships would help insure relevance of the problems studied. In addition, collaborative research would involve those in the research process who are ultimately responsible for making classroom applications of the research findings.

Chall (1975) calls for a model in which the university-based researchers begin their role only after the problems have been defined by teachers and administrators. Her suggestion is, of course, quite different from the model in which schools make themselves available to researchers. Others have advocated a joint role in the entire research process (DeVault, 1965; Louhi, 1978; Osguthorpe & Bishop, 1978). Examples of the collaborative research process taken from various Teacher Corps projects are described in the book *Adapting Educational Research: Staff Development Approaches*, (Morris et al., 1979).

Practitioners have unique sets of experiences which should be used by researchers during problem identification. Jackson and Kieslar (1977) describe four key perspectives of educators in the field; their view of reality, their vision of what is achievable, the average level of know-how, and the commitment to act. Tyler (1978) also emphasizes teachers' and administrators' direct experiences with students, parents, and the community.

There is a danger, however, in research having a purely responsive role. While there should be an element of service in the research effort, the leadership role of research should not be forgotten. Persons in the research community, typically university-based, do have a unique position. They can create time to think, to integrate new ideas, and to devise new solutions to old problems or new perspec-

tives of these problems. Researchers should move beyond the demands of the immediate crisis and look to the future. Surely practitioners don't have the time to do this. Begle and Gibb (1980) describe a situation in which at times research follows the needs of school practice rather than moving ahead to illuminate issues and define new problems.

The contributions of basic research have resulted because individuals were allowed the time and resources to learn more about teaching and learning in the abstract, leaving others to make the applications. This has been true of many of the great scientific discoveries.

One problem with researcher-controlled topics, however, is traditional research methods often limit the definition of topics. Mishler (1979) says that methods tend to determine the problem investigated instead of the reverse. Ianni (1977) in his discussion of ethnographic techniques describes ways of letting the theory and the things to be observed emerge from the actual field-work experience. Even though one is going to the field with prior knowledge and experience as a guide, there should be a flexibility which allows the researcher to be shaped to some extent by the realities observed. One hopes some of the naturalistic methods which are not being applied to educational research can provide techniques for dealing with more broadly defined topics.

Finally, to establish topic credibility one must distinguish between researchable and non-researchable problems. Clifford (1973) cited Scannell's concession that "many of the important questions of arithmetic instruction are simply not researchable issues but matters decided by philosophical or normative considerations" (p.28-29). Problems are often moral issues, complex issues with uncontrollable variables. Current examples of educational problems include desegregation techniques, early drug-use by young people, and teenage parenthood. While there are researchable aspects of these problems, the larger issues will be decided by the courts, by community mores, and other methods. Researcher's ultimate belief in empiricism is not the answer to all of society's problems.

## ESTABLISHING RESEARCH CREDIBILITY THROUGH DISSEMINATION

If research offers answers for some educational problems, these answers must not only be relevant, but they must be heard. Ultimately, this may be the most practical aspect of the credibility issue. Research findings must be brought to the practitioner in a clear and

timely fashion, and they must be disseminated to the scientific community to meet the needs of other researchers. And the two targets of dissemination do not require the same types of efforts. This discussion will focus on dissemination to practitioners.

The importance of dissemination is recognized by many, including the government which now sponsors 21 major dissemination networks and 208 federal laws which mandate it (Bain & Groseclose, 1979). But what exactly is dissemination? Schultz (1977) defines it as:

> *...a two-way sharing process for communicating educational needs and problems among educational practitioners, policy-makers, and knowledge producers; and for facilitating rational consideration and the appropriate utilization of the outcomes of research, development, effective educational practices, and other knowledge that can be used for the improvement of education.* (p.1)

The important concepts here are *two-way* sharing and the broad use of research—for policy, for other researchers, ultimately for improvement of schooling.

The Dissemination Analysis Group (DAG), a U.S. Office of Education Committee, devised a dissemination model which expands upon Schultz's definition. Fletcher (1977) describes the DAG model:

Level 1:

*Spread*—The one-way casting out of knowledge in all its forms: information, products, ideas, and materials, "as though sowing seeds"; e.g., radio and T.V. broadcasts, ERIC, journal articles.

Level 2:

*Exchange*—The two-way or multi-way flow of information, products, ideas, and materials as to needs, problems, and potential solutions; e.g., conferences, site visits.

Level 3:

*Choice*—The facilitation of rational consideration and selection among effective educational practices; e.g., traveling, exhibits, catalogs, comparing alternatives.

Level 4:

*Implementation*—The facilitation of adoption and installation of improvements; e.g., on-site technical assistance, locally tailored training programs.

The DAG model realistically views dissemination as a complex, multi-faceted process. It emphasizes the need to progress from simply "telling" to a communication process which provides support for actually implementing change in the schools.

*Current Dissemination Practices*

> *The truth is that most practitioners do not turn directly to researchers for advice, nor do most researchers offer it. The two groups talk more among themselves than they do to each other—and so they should if they are to do justice to their respective tasks.*
>
> (Jackson & Kiesler, 1977, p.13)

If the above is true, where then do practitioners get information regarding new techniques?

Berger and Andolina (1977), report the frequency with which various information sources are used by administrators to obtain research results:

| Source of Information | Frequency of Use |
|---|---|
| 1. Journals, periodicals, and bulletins | 93% |
| 2. School or district inservice | 90% |
| 3. Informal meetings with colleagues | 82% |
| 4. Conference proceedings | 71% |
| 5. ERIC | 24% |
| 6. Publisher's representatives | 5% |

The Reys and Yeager (1974) study showed that 87.5 percent of the respondent elementary teachers seldom or *never* read research-flavored articles. Similarly, Lancaster and Smith (1978) indicate that the first source of needed information is usually one's personal files. If these fail to provide the answers, an informal communication is typically the source, and finally the person may use the library.

These reports stress the importance of not only the printed word, but also personal communication. Dissemination, however, tends to stay at Levels 1 and 2 of the DAG Model which provides information, but does not effectively enhance the application of the information.

Dissemination is complicated by the growth of research in small areas of specialization, and results are correspondingly specialized. The average practitioner has little time to read and synthesize fragmented reports of a larger issue. Lancaster and Smith (1978) summa-

rize this dilemma by noting that "many professionals report an 'information overload.' They are not looking for more information, but for more efficient ways of receiving and processing information." (p.380)

A major source of information for many educators is a key person within a school or district who has a great deal of informal influence (Berger & Andolina, 1977; Embry, 1979). To illustrate this, Lancaster and Smith (1978), use a concept borrowed from industrial settings, describing the "information gatekeeper," a person in an organization to whom others go for information, using both formal and informal contacts. The "gatekeepers" make it their business to keep themselves informed of new developments, both by reading and through personal contacts. Gatekeepers serve as key disseminators in a school. They have credibility; they are aware of local needs; they have already synthesized information, and can present it in a meaningful way. Furthermore, these persons remain on-site to promote actual implementation.

*Establishing Credible Dissemination Practices*

Among the five factors which affect the dissemination process are informal communication channels, the nature of the research report, and the process of knowledge translation. By changing critical aspects of these elements, dissemination practices could become far more effective. Two areas (needs assessment, and establishing a separate disseminators' role group) while not revolutionary, are more atypical than the others in terms of current practice.

First, dissemination to practitioners should be based primarily on the assessment of needs (Acheson, et al., 1977; Embry, 1979; Stank, 1978). Too often, either the needs of the producers are the focal point, or no needs whatsoever are considered, as would be the case at the DAG Level I— Spread. This can result in the information bypassing those persons with the greatest need. Practitioner surveys could be conducted to provide a point of departure for researchers when selecting their topics (Bain & Groseclose, 1979; Embry, 1979). A dissemination model which begins with a needs assessment is a model which is implemented on a local level, with the disseminator looking for the findings rather than the researchers distributing the findings.

Another major factor affecting dissemination is the potential effects of informal communication channels. In spite of the many established formal networks, one of the most powerful dissemination influences is a trusted colleague. Lancaster and Smith (1978) describe the invisible college concept of colleagueship:

> *An invisible college is now recognized to be an informal communication network composed of a scientific elite in some specialized research area. The members communicate with each other via telephone, correspondence, and professional meetings. They exchange preprints, reprints and drafts of proposals...information spreads rapidly and efficiently through such a community...* (p.377)

The same concept operates within many formal and informal practitioner networks. "Invisible colleges" can exist within schools, school districts, and among former classmates. Bain and Groseclose (1979) cite other networks, including education associations, subject-matter associations, and teacher centers, which promote informal communication. Local professional associations are also examples of practitioner networks which provide informal communication channels similar to an invisible college. These are powerful forces in the dissemination process, if one would systematically use them.

The more traditional way of disseminating research results is through the printed word, the published research report frequently criticized as a tool for disseminating research to practitioners. Too often the reports are written for fellow researchers with methodology and research design as the major focus. There has been a call for reports written in clear, practical language (Beal & Meehan, 1978; Bell, 1975). Strike (1979) says:

> *Results must be reported on time in language comprehensible to the nonexpert and should confine recommendations to manipulation of variables whose manipulation is within the power of decision-makers or practitioners.* (p.15)

Their view is consistent with Lancaster and Smith's (1978) discussion of the growing need of the researcher to communicate not only with the practitioner, but also with the "man in the street." They call for a "repackaging" of research results which involves translation to popular terminology, publication in journals directed to practitioners, and even using alternative media. The repackaging of research results is supported by Reys and Yeager (1974) who found that while teachers did not tend to read research articles, 97.5 percent reported that they did read general education journals.

Embry (1979) recommends not only the use of simple language in reports, but suggests that research results be printed in a variety of journals which appeal to different types of educators. He further recommends journals be used rather than books, because they are more timely and accessible.

A fourth factor affecting successful dissemination is the issue of

knowledge transition. Research results often need to be "translated" into suggested classroom procedures, if one expects to achieve an impact. Without this step, research, especially basic research, appears less relevant, and less credible to the classroom teacher.

However, in connection with the dissemination problem, there are other dimensions of knowledge translation to be considered, particularly the idea of consolidating knowledge into meaningful chunks. Disconnected data from a series of studies are confusing and the major points are lost. Dissemination processes should consolidate knowledge into basic generalizations and guidelines for teachers to follow when making classroom decisions (Stank, 1978).

Such consolidation can be accomplished through the development of new products or procedures. Beal and Meehan's (1978) information system model moves from knowledge translation to product development, and then dissemination and adoption. The model provides practitioners with adapted research results, rather than original results, and is characterized by research findings which have been consolidated, translated, and incorporated into packages ready for classroom implementation. The disadvantage is the increased time lag before knowledge application.

Three of the four factors discussed (needs assessment, informal communication, and knowledge translation) call for a third player in the communication process; a disseminator who serves as a link between the researcher and the practitioner. Tyler (1978) calls those in this third role the middlemen, identifying some as textbook publishers and distributors, university-based teacher educators, and at times, staff in state departments of education. Technical assistors who serve as consultants to schools are also examples of middlemen who can disseminate research (see Chapter 8). Persons in these positions, however, are not a part of local schools; so, they too, like the researchers, may not be aware of pressing local needs.

Bank (1979) and Stank (1978) outline models which rely upon on-site linking agents who are program planners or program evaluators. These agents conduct needs assessments, share relevant data from other similar projects and studies, and put local evaluation data into context. It is very important to identify or create linking agents, or on-site disseminators and to make sure they are kept up-to-date on current research findings. Another possibility is to build on the natural influence of the "information gatekeeper."

A disseminator, in any case, should bring relevant information to the practitioner, and should interpret and provide support to the practitioner during the application of that information. In addition,

the disseminator should bring information back to the researcher. The researcher needs to have an accurate picture of the realities of the school, including organizational patterns (Deal, 1979), and accurate problem identification (Chall, 1975; Osguthorpe & Bishop, 1978). The communication pattern should be two-way. Thus, not only is dissemination enhanced but the credibility of the entire research process is developed.

## SUMMARY: RECOMMENDATIONS FOR ESTABLISHING SCIENTIFIC AND PRACTICAL CREDIBILITY

This examination of the educational research process has considered four major areas: research orientation, methodology, research topic selection, and dissemination of results. Each of these topics contributes in some way to the growing lack of credibility of educational research.

In many respects this lack of credibility stems from the misconception that only those who treat educational issues in a theoretical manner are scholars, and the more elite. This leads to a sense of antagonism between those who are oriented to everyday classroom instruction and those who deal with the abstract issues.

The fact that educational research is being attacked not only by the practitioners (with growing organized force), but also by those within the research community indicates that the situation is not just an outgrowth of old stereotypes. Regardless of one's orientation, the ultimate question needs to be, what can be done to promote improvement in the schools? Such improvement may be arrived at through change or through a verification and strengthening of current practices.

This chapter has given some specific recommendations for establishing credibility and for the eventual improvement of schooling using research as a guide. While many of the recommendations have been technical and relate to the actual process of designing and conducting research projects, many are concerned with the more general problem of establishing connections within the total research process and the problems of specific local schools. In all cases, the recommendations relate to increasing the potential of research to affect change.

In summary, researchers can relate their work to local issues by:

1. Involving practitioners in the research process, especially in topic selection.
2. Emphasizing the unique characteristics of each setting whenever possible in the research design, whether using experimental or naturalistic methodology.

3. Following a practical research orientation in those areas of study which tend *not* to produce findings which are generalizable to a variety of settings.

Practitioners can also see that research is related to local problems by:

1. Identifying and supporting local research disseminators who also act as linking agents with the research community.
2. Telling researchers what the critical problems are.
3. Working with the research community to adapt existing research findings to solve local problems, as opposed to encouraging new research studies to solve a given problem.

Many of the recommendations here can be implemented only by researchers, but even these technical suggestions are made to increase credibility, and thus eventually affect change. These include:

1. Using both theoretical and practical research orientations to study the range of problem situations at hand.
2. Applying all research methodologies with rigor and skill.
3. Giving serious consideration to the use of naturalistic methodologies, but in ways which meet the unique needs of educational problems.
4. Taking advantage of the wealth of research already done to form the basis for making statements to practitioners by techniques such as meta-analysis.
5. Taking a leadership role in identifying possible causes of school problems and their solutions, being careful to avoid the constraints of methodology demands or conventional beliefs.

Finally, credibility can only be established if the major results of research are known. Dissemination to fellow researchers is typically accomplished, but dissemination practices should also be directed toward practitioners. Those typical processes of disseminating research findings to the scientific community, however, are not appropriate for affecting improvement of local schools. Practitioner-oriented dissemination can be emphasized by:

1. Selecting only those findings for presentation to a given group which meet their critical needs.
2. Using informal practitioner communication channels which have already been established.
3. Reporting research in general educational journals and popular magazines.

4. Developing usable products and general guidelines for making classroom decisions based on clusters of related studies.

Many of these recommendations are already in place, but they are not common practice. They are not considered routine aspects of the total research process.

What is encouraging is that educational research is not as private a domain as it was in the early part of this century. Many more are participating in the process; many more are reacting to the process. If one takes the position that research will continue to say something useful to educators, then the increasing interest in research, even when it is critical, is promising.

What is important is that the developing technologies of data processing and analysis do not inhibit educators (at any level) from continuing to question, express opinions, and offer suggestions for improvement in the research process. Educational research is the domain not only of scientists, but also of the consumers of research. If this ownership is relinquished, then the potential of research to affect change is diminished. Credibility in the ultimate worth of educational research is dependent not only upon technical skill, but also in the active interest and involvement of the practitioner.

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# Collaborative Action Research: The Integration of Research and Service

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## THE PROBLEM

While it has always been assumed that educational research and practice should be intimately tied together, research and practice seem to have become alienated from each other. Practitioners seldom conduct research of any kind, but often question the relevance and importance of educational research. In the face of the questions, demands, and problems challenging education, the profession can no longer afford a separation between research and practice. It never could! The reintegration of educational research and practice is essential if any genuine progress is to be achieved in addressing the pressing and important issues in education.

Educational research has consistently been caught in a fundamental dilemma between the practical or "doing" aspects and scientific or "knowing" aspects of a problem. On one side are the real, practical demands on the teacher that are specific to the situation. On the other side are the demands of the scientific; that the knowledge is vigorously obtained and can be shared and used by a community that is larger than those with direct experience of a specific event.

A major problem in integrating research and service is research methodology and design. Because the quantitative methods of the physical sciences have enjoyed the highest academic status, educational researchers "have gone empirical" with a vengeance. Quantitative methodology, as it has percolated down through physical sciences, has become exceedingly popular in educational research, resulting in forced fits between research methodologies and educational problems. The emphasis on quantitative methodologies, particularly experimental design, has limited the selection of research topics to problems that can be addressed by such methods, or, worse, has led us to believe that these methods were sufficient to address any issue that was at hand (Graham, 1979).

However, educators are witnessing a change in the discussion on research methodology in education. The quantitative and ex-

perimental research models borrowed from the physical sciences cannot address the major research questions (Graham, 1979; Reid, 1979; Schubert, 1980; Schwab, 1970, 1975; Scriven, 1979). The disparity between the real life problems suggested by the front line work of teachers in the classroom and the awareness that experimental and quantitative research designs no longer work in all cases has raised a number of questions about the appropriateness of traditional experimental research approaches.

The context of Teacher Corps projects illustrates the problem of fit between the experimental method and the improvement of educational practice. Measuring student learning and academic achievement along with affective growth is a paramount concern of any project but particularly a Teacher Corps project which focuses on research adaptation. The ultimate objective of Teacher Corps Research Adaptation Cluster projects is to introduce and demonstrate (through research adaptation) change to increase the effectiveness of education for low income, special needs, and minority group children. Ways need to be formed to determine the degree to which this objective is achieved. What happens to student learning when research validated practices, products, and processes are systematically adapted to bring about organizational, curricular, and behavioral change? Will students change their perceptions of self and others? What kinds of attitudes and behaviors will change in students? How does Teacher Corps preservice and inservice instruction for teachers affect student cognitive and affective growth?

In the past the experimental method often has been used in an attempt to address these kinds of questions. But the experimental method for evaluating student growth and achievement as outcomes of a Teacher Corps project or any innovative program has three major problems. First, the application of the experimental design requires that experimental and control conditions be held constant throughout the length of the experiment. This means that all students and teachers assigned to one treatment receive it consistently; to avoid contamination. If data about differences between students and teachers participating and not participating in the program are to have meaning, treatments cannot be modified while the experiment is in progress. In accepting the rigorous conditions of the experimental method, one is asked to fit the program to the design rather than vice versa. The use of the experimental method would, then, conflict with the fundamental principle that evaluation should lead to the continual improvement and modification of a Teacher Corps project. Project staff cannot be expected to limit their demonstration efforts and activities to accommodate the constraints of a

research design, just to guarantee internally valid data. As project staff members learn about the strengths and weaknesses of their project activities, they may have to change, and sometimes radically alter the project in order to meet the needs of the project's constituents and clients.

A second major weakness of the experimental method as an evaluation tool, is that it yields data about the effectiveness of a project after the fact. Therefore, while it is useful as a summative device, it has little value as a decision-making tool. Post hoc data are not provided at appropriate times to enable project staff to determine what their project should be accomplishing, or what should be changed. Often by the time experimental data have come in, it is too late to make decisions about plans and procedures that could make the difference between success and failure.

Finally, the experimental method is typically used to study discrete elements of an educational problem and, therefore, often yields isolated factors associated with specified outcomes which have doubtful application to the complexities, convolutions, and changing contexts of varied school and classroom situations. It is unrealistic to assume that any experiment can actually control all pertinent factors save the independent variable. The pertinent factors in children, parents, teachers, classrooms, curricula, communities, homes, and in the interaction of all these variables with each other and with other causal factors are not understood. The fact is, in real life, people do not get assigned to each other, to problems, and to time and place with rigorous experimental randomness and neat designs. To shed light on the real life of the classroom, of the school, of teaching and learning, researchers must either study real life or simulate in the laboratory *all* the conditions in real life that might possibly be important in determining cause and effect (Goldman, 1979).

The ecology of teaching, the ecology of implementing educational innovations, and the ecology of initiating change require an emphasis on hypothesis generating and qualitative methodologies. An awareness of the multidimensionality of teaching and learning, of curriculum development, and of educational change, compellingly argues for a search of methodologies that facilitate the study of the many dimensions, variables, and meanings that appear simultaneously in the classroom (Tickunoff, Ward, & Griffin, 1979). Tickunoff (1977) observes that "what we call classroom teaching and learning is embedded in a complex myriad of interdependent variables, all of them situationally specific." Kennedy (1977) refers to "the complex array of human/environmental behavior and variables

which influence classroom events, phenomena, and processes." An adequate understanding of the meaning and significance of profile differences for classroom behavior and learning can only be provided through information about the contexts of behavior: the subject matter taught, the physical setting of the classroom, the persona of the teacher, and student opinions and interpretations of behavior (Delamont, 1976). Goodlad (1977) makes a similar point relative to the school curriculum and Carini (1975) argues that in order to understand the phenomena of education perceived reality, particularly participants' views of educational situations, are essential.

Educators need to emancipate themselves from the straight jacket of experimental design and recognize that good research can be conducted in many different ways. Good research requires common sense. With some training in documentation, participatory/observational techniques, case study approaches, the use of audio/video taping systems, personal journals, record keeping, teachers in partnership with university faculty can bring about a renaissance of school-based research which characterized the progressive era in education and contributed valuable ideas and practices for the education of children.

Conducting research without the full cooperation and collaboration of the person responsible for maintaining life—namely the teacher—is impossible. Teacher and student interpretations of the meanings of events must be obtained. Natural classroom settings must be maintained even though a vast array of variables is studied. Alternative approaches to educational research must reflect collaborative relationships among teachers and researchers, if research outcomes are to be perceived as relevant and useful by practitioners and improvements in education are actually to occur (Clark, 1976; Elliott, 1977; Krathwohl, 1974; McLaughlin & Marsh, 1978; and Tickunoff, Ward & Griffin, 1979). Such working relationships are epitomized in collaborative action research.

## COLLABORATIVE ACTION RESEARCH

Collaborative action research is characterized by several elements:

1. Research problems are mutually defined by practitioners and researchers.
2. University faculty and classroom teachers collaborate in seeking solutions to practitioner's problems.
3. Research findings are used and modified in solving problems.
4. Practitioners develop research competencies, skills,

and knowledge, and researchers reeducate themselves in field-based and naturalistic research methodologies.
5. Practitioners as a result of participating in the adaptation process are more able to solve their own problems and renew themselves professionally.
6. Practitioners and researchers co-author research reports.

Collaborative action research liberates teachers' creative potential, stimulates their abilities to investigate their own situations, and mobilizes human resources to solve educational problems. Collaborative research begins when researchers, university faculty, and teachers assist each other in developing the skills to identify and conceptualize problems.

> *Collaborative action research is a process in which teachers and researchers work with parity and assume equal responsibility to identify, inquire into, and resolve the problems of classroom teachers. Such collaboration recognizes and utilizes the unique insights and skills provided by each participant while, at the same time, demanding that no set of capabilities is assigned a superior status. It assumes a* **work with** *rather than a* **work on** *posture—the latter being more frequently the modus operandi when teachers are asked to join researchers in a linear R & D endeavor.*
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> (Tickunoff, Ward & Griffin, 1979).

The *work on* posture has been typical of traditional experimental research, which has been a technological process in which educational researchers keep the key decisions outside the school and away from teachers. This approach prevents teachers and the school from becoming the subject of their own transformation. Freire (1973) insists that methodological failings can always be traced to ideological errors. There is an implicit ideology of paternalism, social control, and non-reciprocity between experts and "helpees" which underlies traditional experimental research. (In the traditional research study one finds the word "subjects" interesting language which suggests that someone must be the "ruler" or the manipulator.) If one adopts the collaborative action research model which fosters dialogue and reciprocity, one must first be ideologically committed to equality, to the abolition of privilege, and to non-elitist forms of research leadership wherein special qualifications may be exercised but are not perpetuated.

Collaborative action research emphasizes the involvement of those who are traditionally "researched" to help identify problems,

collect data, interpret information, and apply findings to solve problems. Collaborative action research answers the question of who has the right to create knowledge by arguing that the expected beneficiaries of research should design and carry out their own research. There are three assumptions underlying this approach: 1) parity in decision-making among researchers, trainers/developers, and practitioners; 2) respect for the unique perspective of each constituency; and 3) equal assumption of responsibility among each participant in the collaborative research and theory development process (Mergendoller, 1979).

A collaborative research process can be of immediate and direct benefit to a school and its constituents. It is important that the school and the community gain not only from the results of research, but from the process itself. This means, for example, that teachers, students, and members of the community—as a result of participating in the research process—will be able to articulate problems themselves and to initiate processes to find solutions. The fundamental principle of collaborative participatory research and its point of most radical departure from orthodox research is that the research process is based on a system of discussion, investigation, and analysis in which the researched are as much a part of the process as the researcher. Theories are neither developed beforehand to be tested, nor drawn by the researcher from his or her involvement with reality. Reality is described by the process through which a school, community, and its teachers, parents, and children develop their own theories and solutions about themselves and their situations (Hall, 1977).

The tradition of the research establishment is hard to change. Too easily, teachers become consultants to, rather than full participants in the research process. Too easily, the researcher becomes the sole originator of the research while the practitioner becomes simply the object of study rather than an investigator as well. If teachers are to be full partners in research, they must be coinvestigators who share with researchers the responsibility for the design and execution of the research and for the interpretation and dissemination of the results (Gajewski, 1978).

Teachers participating in collaborative action research become agents of their own change. Teachers can use action research to grow personally and professionally, developing skills and competencies which empower them to solve problems and improve educational practice. This can be done without formal staff development activities. Moreover, not only do teachers identify practical theories that apply to their own idiosyncratic settings but they are

also able to formulate these practical theories as general hypotheses which have the potential for universal applicability.

Action research yields its own findings regarding the effectiveness of different research based strategies in different situations with different pools of available resources, and for different kinds of content. As Massanari (1978) suggests, "such findings should be collected, synthesized, and disseminated to the education community. They would be valuable and needed contributions to the knowledge base that supports education personnel development. Publications such as 'What's Working Where' and 'What Didn't Work Here' would be welcomed by the education profession."

Collaborative action reseach requires the coordination of the publication and research interests of university faculty, the thesis research of graduate students, the term paper requirements of graduate and undergraduate students, with the problem-solving and inservice training needs of teachers. Collaborative action research offers the opportunity for intensive involvement between researcher and practitioner; it offers mutual sharing and stimulation of curriculum development, teaching, and measurement problems and the sense of participating in intellectually coordinated research on "large" educational problems (at least as contrasted to the more typical thesis and term paper topic). Most important, collaborative action research is substantial professional inquiry and scholarship in its scope, its epistemology, and its outcome. A practitioner with this orientation and skill in action research is no longer static or dependent on others for professional progress. The practitioner's own professional growth and competence is enhanced. Not only are practitioners likely to feel professionally alive, they may also feel effective—in that they can do something about their profession. If action research meets these goals then we are really describing a generic process of inquiry and growth for the education profession (Mosher, 1974).

University faculty, graduate students, and teachers can be trained in the collaborative process so they can produce knowledge from practice. The intellectual and professional process of producing new knowledge about problems in teaching, curriculum, and school change is the *raison d'etre* of action research. The issue here is that of tension between *means* (curriculum development or educational change) and an *end*, i.e., knowledge from and for practice and the training of people able to inquire professionally in this way about a wide range of issues in education. Producing knowledge from practice results from an alternating cycle of reflection and action, hard thinking, careful practice and evaluation designed to generate a

more comprehensive understanding of educational problems and their possible solutions (Mosher, 1974).

Collaborative action research is service, a process of concurrently inquiring about problems in education and acting on them. It assumes that educational practice is the first business of education, that there is a generic need to improve educational practice, and that the improvement of educational practice requires the confrontation of real problems in the school by conceiving alternatives and testing them out. Practice then becomes the crucible for innovation, an obtrusive measure of assumptions, speculations, and theories.

There is great promise in the pursuit of practical inquiry with the collaboration and mutual support of researchers and practitioners who together contribute to the solution of classroom problems and to the improvement of educational practice. The idea of such collaborative efforts was articulated by Schaefer (1967) in his book, *The School as a Center of Inquiry*, and demonstrated in the 1940's by Stephen Corey and others at Teachers College, Columbia University in action research projects which brought together teachers and professors primarily for curriculum development purposes.

Teacher oriented inquiry and the view of the school and the classroom as the proper focus of research action will come about when researchers and teachers change their attitudes and perceptions about inquiry and research. McKenna (1978) speaks clearly to this point:

> *...many researchers will have to revise their posture that scholars mustn't get their hands dirty with the clay; that the potting must be done by others, once the scholars have prescribed the clay mix and kiln temperature. More specifically, the attitude that you can't learn much in the 'messy' situation of the ordinary classroom will need to be replaced with one that accepts real schools as the most appropriate places for conducting research and development. And researchers will need to come to recognize teachers as peers, as colleagues, who have much to contribute to improving the R&D process, from identifying researchable issues, determining research design, data gathering and analysis, to planning programs based on findings. Once these are accomplished, new strategies for conducting research may need to be devised and tested in order to inquire into the multidimensional problems that are identified for study.*
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> *Teachers on their part will need to reconceptualize their roles to include involvement in inquiry and problem-solving on instructional issues. And they will need to gain confidence in their ability to contribute on a parity basis to the research and development process.*

The integration of research and service through collaborative action research can help our schools become centers of inquiry where university faculty and professional teachers inquire systematically on such fundamental issues of what is to be taught, how, by whom, where and with what outcomes for students. The process of systematic inquiry constitutes effective and meaningful professional development. Significant learning and growth occur when teachers and university researchers work together in carrying out research to solve problems that concern themselves and the schools.

The school is the best laboratory for research. In one school building there probably are more real researchable problems deserving the support and attention of funding agencies than one would imagine. Jackson (1968) says that the classroom teacher typically engages in as many as 1,000 interpersonal exchanges during the course of a six-hour day, frequently averaging 200-300 interpersonal transactions per hour. This observation in itself testifies to the complexity and immediacy of the daily situation in which every teacher is forced to make decisions. A single school is a research goldmine in terms of important questions, variety and richness of data, and numbers of potential researchers. Educational research must be fashioned from the fabric of the questions and problems of the school. The practical orientation of the school provides a research perspective that fits the unique and rich character of educational problems. The dominant chord of school and classroom oriented research supplants the ethos of knowledge for the sake of knowledge, with inquiry that generates usuable knowledge which spawns decision and action.

Paradoxically, it is the knowledge generated from practice that will enrich our conceptual understandings and educational theory. The action, reflection, teaching, evaluation cycle feeds on itself epistemologically. Collaborative action research adds to both conceptualizing and practice by validating one against the other (Mosher, 1974). "To suggest that theoretical and practical research can be conceived as thesis and antithesis enables the possibility of synthesis. It runs the risk, admittedly, of oversimplication; but surely there must be hope for productive combinations of practical and theoretical orientations" (Schubert, 1980, p. 23).

## THE TOOLS OF COLLABORATIVE ACTION RESEARCH

### *Documentation*

The fundamental tool of collaborative action research is documen-

tation. Documentation is a way of monitoring, observing, and defining what takes place in ongoing processes (Ianni, 1978). It subsumes an entire gamut of activities concerned with information (Mertens & Yarger, 1979). These include:

Collecting information
Generating information
Organizing information
Synthesizing information
Analyzing information
Explaining information
Using information
Disseminating information

The purpose of documentation is to develop an ongoing record, an ongoing process, and finally a continuous form of assessment for programs. Documentation is the *sine qua non* for evaluation and action research. The only adequate way of describing what takes place in any social or behavioral situation is to be there, to be a participant, to observe continuously and to become intellectually and emotionally involved in what takes place. Action research requires that a field perspective be taken rather than a laboratory perspective. Educational research is traditionally a process by which pre-existing ideas are vindicated or validated. It is imperative in action research that teachers and university faculty researchers, even though objective, should be involved in the process and milieu of the classroom and give feedback which allows individuals to change their programs—and even to change their objectives, when appropriate and possible. There is no lack of scientific rigor in such a position. Documentors can take a field-oriented approach; they can spend a great deal of time observing and still make objective value judgments. The field-oriented approach requires training and careful analytic work, but it can be done (Ianni, 1978).

An analytical process which is essential to documentation is adequate observation, and, far more important than the observation itself, the recording of those observations continuously—and immediately after the observation has been made. Documentors need to record their own impressions immediately after an event, in addition to using tape recorders during the observation.

Another important documentation approach is the use of questionnaires, surveys, and other devices aimed at recording perceptions, ideas, questions, concerns, and trepidations—everything that takes place in a program—from as many teachers, students, and staff members as possible. Documentation is a laborious process and ought to be a shared and collective responsibility. There is simply no

way in which one can describe documentation as anything but a great deal of work, but work which has an important payoff at the end.

Documentation helps to establish the best strategies for action research and program development when it is used to develop a series of case histories or clinical studies to look at the same processes in education in a number of different settings. One of the great recurring problems in educational efforts is the tendency for programs and projects not to inform or reinforce each other. Consequently, each project, each new program, tends to begin as if nothing had ever occurred before. As a result, it is impossible to make any kind of judgment based upon more than one case.

Documentation is for making value judgments. There is no way to avoid it. What documentation does, however, is to allow educators and other professionals to underwrite and to validate what is taking place in a particular program. Values are of tremendous importance. Documentation should not be viewed as simply a matter of collecting and keeping sterile quantitative records. The qualitative issues—the values that are inherent in a program—can only be described through adequate documentation (Ianni, 1978).

Documentation can be regarded as a phenomenological tool for it records perceived reality as well as objective reality, it records feelings and personal experiencing and through documentation we can describe and interpret teachers' and students' intentions, probe the realms of their lived experience, and explore the boundaries of their awareness that form their horizons in the classroom and in the school. Documenting feelings, personal experiencing, and perceptions helps to define action research as a vital process which captures the pulse, the vitality, and the fibrous nature of life in the classroom.

## RETROSPECTION

One of the ways in which documentation can be used to explore the phenomena of the classroom and the school is through retrospective studies of curriculum development. In classroom situations, one finds five commonplaces (Schwab, 1975): teachers, students, subject matter, curriculum decisions or policy, and milieu or psychosocial and material environment. The interactive impact of these forces, in fact, constitutes the curriculum. Curriculum, used in this way, is the central focus of educational research (Schubert, 1980). Wise (1977) argues that if developing good curricula is a central concern then personal accounts of such attempts should be

emphasized in professional discussions, and a literature of accounts of curriculum practice is necessary for training new curriculum specialists. Retrospection is, therefore, a legitimate form of inquiry into curriculum development practice. Productive forms of personal inquiry into curriculum development include case studies (Walker, 1975), historical study through documentation analysis (AIRPD, 1971), and retrospective accounts (Purves, 1975; Regan, 1971; Wooton, 1965). As a form of inquiry retrospection is unique including both introspection and observation as sources of data.

Retrospective accounts of curriculum development offer "our most precious source of knowledge about our field—our own experience" (Wise, 1977). Such accounts recognize curriculum development as a personal, human, particular, and often episodic process. It is the human particulars of curriculum development which make practice what it is, and it is those particulars with which the field is out of touch (Kaplan, 1964; Schwab, 1970; Wise, 1977).

Retrospective studies grasp the contexts, nuances, personal realities, and situational specifics of what happens when a teacher tries to implement new ideas and approaches. As personal accounts they describe logic as demonstrated in classrooms, as opposed to *reconstructed logic*—the manner in which personal experiences are presented as knowledge (Kaplan, 1964). Curriculum theorists (Eisner, 1975; Fox, 1971; Schwab, 1970; Walker, 1975; Wise, 1977) indicate that the major problem of curriculum theory is that personal experiences have been reconstructed into a knowledge which does not reflect actual practice. The aim of retrospective accounts is to capture the practical sense and concrete reality of the classroom world, and to share these with colleagues. Summarizing the case for retrospective studies as a form of action research, Wise (1977) observes that:

> *Our literature about curriculum development does not now indicate much in the way of accumulated practical sense. We do not have a rich store of studied and catalogued accounts of curriculum development practice in which what happened and how well it happened are presented. We do not recount for others the problems we faced in development, the problems solved, the solutions discovered, the solutions failed. We do not recapture and report strategies of thinking that have led us to good decisions. We do not distill from our experience what manners of imagination, judgment, arguments or brainstorming helped or hindered our work. We ought to be reflecting on our experiences in curriculum development, recounting them to ourselves, analyzing them, and presenting their accounts to our colleagues in a form that helps them to understand the significance of the experience, the lessons of the experience.*

## THE CASE STUDY

The history of the social sciences is filled with dramatic conceptual "breakthroughs" which have emanated from the use of the case study. The ideas of Freud, Piaget, Maslow, Erickson, Jung, Adler, and Rogers are examples of profound influential ideas which were born and nurtured through the case study approach. The case study is a congenial approach for the person of action, for the person who engages life, who tries out ideas, reflects on their implementation, and tries again. The cycle of thought-action-thought finds comfortable embrace in the case study, a basic methodology for action research.

The case study is the traditional approach of all clinical research and lends itself extremely well to action research. It is the preferred method of the practitioner who is concerned with complex interrelationships among many variables and whose subject matter (i.e., the clinical situation involving human beings) makes experimental manipulation difficult and often impossible (Bolgar, 1965).

When an inquirer approaches a new area in which relatively little is known, the case study is the first methodological choice (Bolgar, 1965). The true power of the case study lies in its ability to generate hypotheses and discoveries, its focus on the individual or an event, its flexibility, and its applicability to natural settings. The procedural requirements for a case study lend themselves to the solution of problems relevant to teacher-student interactions. Case studies can assist in the identification of educationally relevant variables, and the conditions under which they are effective. Case studies are intended for natural settings and contain data collection procedures that can assist teachers in their decision making. The collection of data and the procedures required for case studies are compatible with instructional purposes. The inherently flexible nature of the case study approach, the search to identify sources of variability, and the requirements for data based feedback for decision-making are all components necessary for the improvement of teaching and the design of situation specific programs.

The great strength of the case study approach is its ability to describe in a holistic way the program "treatment" and its effects on students; it does not simply focus on narrowly defined outcome variables, but instead it includes much descriptive information. The case study synthesizes vast amounts of information about individuals and about the instructional program and presents it in a form that can be interesting and easily understood. Information sources including background data, test scores, affective measures,

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self reports, peer reports, staff reports, parent observations, student products, anecdotal data, and evaluator observations, are considered essential for the case study. Of special importance is the development of chronological case histories in which data are collected at different points in time. The integration and cross validation of this information adds strength to the final case study report.

Direct contact and extended observation of the students themselves are often necessary to reach conclusions related to variables involving the academic and affective behaviors of children. Through the case study one can not only examine pre and post test data, but also the intervening events, forces, and activities affecting the life of each student, and the interventions which do or do not influence cognitive and affective changes. Studies of this kind are needed to investigate the developmental histories of different student populations targeted by Teacher Corps and other innovative programs in relation to a particular project's objectives.

In a profession where there is a basic commitment to the teaching and understanding of individual students, it is ironic that research devoted to the full study of individuals is so rare. The full study of individuals enables teachers and university faculty to function as clinical researchers. This is an excellent way to examine the wide range of contextual and multidimensioned variables which impinge on student development, and provides a sound action research base for generating new hypotheses about student learning and growth. The case study is a powerful research methodology for sparking interplay between thought and action, helping to develop increased capacities of analysis which make educational change actions possible.

## THE CONDITIONS FOR COLLABORATIVE ACTION RESEARCH

### *Climate*

In establishing a foundation for collaborative action research, modest beginnings are no disgrace, and are in most respects preferable to more ambitious ones. The visibility and impact of early efforts may be small, but it is advisable to consider carefully the relative merits of simple versus more intricate research plans and data analysis procedures. It is likely that by adopting the strategies of a methodological miser, there is more to be gained than lost. In the conduct of action research, just as in the interpretation of its results, the law of parsimony is recommended (Siebert, 1980). Modest beginnings can serve to build, step-by-step, an action research

tradition of dealing with real problems that already have a natural and interested audience.

By selecting and pursuing questions which focus on the immediate and imperative problems of the classroom and the school, collaborative action research can attract the greatest attention at the most opportune time (when there is something substantial to report), for the best reason (because some progress has been made, either in terms of increased understanding or solutions to problems) and probably from the right audience (those who have a pre-existing interest in the problem and its solution). A mounting record of visible accomplishment is an excellent way to dispel the initial anxiety teachers may experience in undertaking action research.

It is helpful not simply to be alert to questions that are disturbing to practitioners, but also for teachers to get to know colleagues who can help to advance the developing research effort. Particular colleagues may be valuable because they are especially sensitive to emerging problems, because they are creative and have ideas about how educational problems might be solved, because they are skilled in problem definition, or for a variety of other reasons.

### *Conditions in the School*

There are certain necessary conditions which need to be built into the working environment of the schools if teachers are going to function as researchers in partnership with university researchers.

1. Time needs to be made available as part of the teacher's regular teaching load for discussion, reflection, investigation, and speculation.
2. An atmosphere is required in which teachers have the freedom to identify and initiate their own problems for inquiry, to express their ideas and develop their ideas into hypotheses, and to share and defend their ideas with administrators and colleagues.
3. Technical assistance and support and consulting services ought to be provided when necessary to help teachers (and university faculty) learn field-based research processes.
4. Reasonable material support for carrying out research should be available.
5. University credit, staff development credit, or inservice credit should be given to teachers for conducting research if they desire it.

*Requirements of Teachers*

Teachers must be willing to have other adults in the classroom and to see this as a positive factor not interfering with teaching and learning. It is helpful if participating teachers have abilities to describe and analyze aspects of not only their students' behavior but also their own behavior. Teachers who have not thought about classroom teaching and learning in such rational ways may need time to explore these aspects of their classrooms prior to entering the collaborative action research process. Teachers need to consider how to restructure their time since action research may require time away from the classroom. Teachers need documentation and observation skills; they need to be familiar with data collection strategies so they can participate in such decisions; they need to feel comfortable with analyzing and interpreting data, drawing conclusions, and writing reports of the study.

*Requirements of University Faculty*

University faculty members of the action research team may also need to be reeducated to learn to recognize and exploit the naturalistic dimensions of school-based action research. Gaining access to what teachers know about the classroom requires that university researchers have interpretive skill, patience, and the ability to ask the right questions in the right manner. The researcher gains such access through professional relationships that are based on privileged conditions (Emery & Trist, 1973). Teachers' willingness to share ideas, open up their classrooms, critique and try out research strategies, and discuss and interpret findings with the researcher are vital to action research. The researcher wins these conditions by honoring, respecting, and responding to the knowledge and skills of other action research team members and proving his or her competence in providing some kind of unique service to the team. The university researcher must be an unusual person—one who is acceptable and comfortable in public schools, one who possesses interpersonal and group process skills, and a knowledge of research, and one who has the ability to capitalize upon unanticipated events, serendipitous opportunities, and unsettling insights (Tickunoff, Ward & Griffin, 1979).

*Collaborative Process*

It is imperative that all members of the action research team be brought together initially to learn how to collaborate. This is seldom

done. We gratuitously assume collaboration will happen if we bring people together as members of a task force or committee. It is essential to have people concentrate right away on what collaboration is and what it demands. Teachers and university faculty need to be taught how to collaborate and deal with significant questions about the process. What is collaboration? What does it involve? What does it cost? What are its risks? What are its benefits? Am I ready to pay the costs and give up something to get the benefits which accrue from collaboration? How do we help each other in the process? What are the ground rules for making decisions? Collaboration is a dialectical and dialogical process with a lot of give and take and its use in action research requires that university faculty and classroom teachers build trust, communicate and solve problems together from the beginning. Action researchers need to prepare themselves for dealing with the conflicts which naturally emanate from the interface of the different norms, behavioral regularities, and values of the university and the school. Collaboration is not achieved naturally. It is a sophisticated process which must be taught and learned deliberately.

*Attitudinal Change*

Collaborative action research possibilities in field-based teacher education are endless. University faculty need to recognize that their personal, vested interests can be served by their active participation in field-based staff development as an effective *entrée* into field-based research. The irony of the situation is that often university faculty who ostensibly have been trained to conduct research do not know how to carry out field-based research; they cannot do what they ought to do. Rather than viewing on-site teaching and consultation as inconsistent with career development, faculty need to see there is much to gain personally from working with schools and communities in researching the problems created by declining enrollments, in researching the staff development process, in researching the problems of accountability, collaboration, mainstreaming, and teacher burnout. The opportunities for research in the field, particularly in relation to staff development, are limited only by the imagination. First it may be necessary to provide staff development for the staff developers, so that university faculty can do what is often claimed they do better than anyone else—conduct research. A dean in a state university offers this advice to faculty:

Long term systematic approaches to inservice education offer university faculty and classroom teachers the time and place to exploit natural problem situations for action research. To begin, deal with the problems confronting teachers in the classroom and help them to become researchers to solve their own problems. Next, work with them, formulate hypotheses, test them out in the classroom, and write down the results. Everyone should publish. An in-house journal or mimeographed papers could be circulated among faculty colleagues, teachers, and parents in the community. Function as teams of inquirers and problem-solvers, bringing inservice and preservice teachers and university faculty together as research teams. Teachers must be encouraged to investigate problems regarding individualization, school climate, reading, and creativity. It is absurd that concurrently in one university, teacher education program preservice students will be writing term papers, inservice teachers will be writing term papers or preparing projects for a graduate course or workshop, and some university faculty will be writing manuscripts—all in anonymous isolation from each other. What excitement there would be and what quality action research would result if we could assemble these people, create action research teams, identify real problems, and have these teams do some real blood and guts problem-solving. We would break down the fragmented approach to teacher education, integrate preservice and inservice education, and produce usable knowledge. This is the best kind of staff development.

*Collaborative Action Research: A Proposal*

By clustering graduate teacher interns, undergraduate students, graduate students in, for example, administration, counseling, reading, and early childhood, and university supervisors in selected school sites, local districts would have a critical mass of resources to work with in creating staff development and action research programs by redirecting existing resources, consolidating resources, and discovering mutually benefiting resources.

For the sake of an example, imagine a university and a local school district entering a partnership to establish a teacher center. The university and the school district are able to work out arrangements so that the following kinds of university students can be placed in the school district:

1 or 2 post master's degree students in educational administration and supervision
2 master's degree students in administration
3 master's degree students in counseling
3 master's degree students in reading
An early childhood team of two master's degree students who could staff an early childhood learning center (full year)

**And**

10 master's degree teaching interns (full year)

**In Addition**

15-20 undergraduate degree students who were exploring teaching, and
1 or 2 university faculty assigned as on-site supervisors with additional faculty coming in to supervise students

A school district would then have approximately 35-40 people available as additional resources.

There are endless possibilities with this kind of critical mass available to serve the interests and needs of all parties concerned.

After two or three months of the internship, teaching interns could begin to substitute for some classroom teachers so that regular staff could begin to have one or two days a week to:

1) plan and develop curriculum materials
2) visit and observe teachers in other classes. Teachers could become interns again—interning with each other
3) revise curriculum
4) participate in workshops or take courses
5) participate in conferences and case studies of individual students
6) design and plan approaches to individualize instruction
7) meet with colleagues in a relaxed atmosphere to share ideas
8) assume responsibilities for staff development activities

Interns could release a cadre of experienced, knowledgeable, and extremely competent teachers to help supervise and assist the less knowledgeable, the less experienced, and the less able members of a teaching staff (teachers teaching teachers). This could prove to be one of the most effective means for addressing the problems of supervision.

Counseling and reading interns could provide support services for meeting the special emotional and intellectual needs of students.

Post master's administration interns could take on specific substantial administrative assignments and problems of the kind which would alleviate administrators of some burdens.

Master's degree students in administration could collect data and write up reports dealing with administrative matters.

Undergraduate students who are exploring teaching as a possible career could provide tutorial help to children and offer individual attention to children who need it.

Through the cluster placement of interns, superintendents and principals would have additional resources which would enable them to gain flexibility in staffing and offer increased opportunities for differentiated staffing, individualization of instruction, and staff and curriculum development.

An on-site university supervisor could offer a course or a series of workshops for school staff. Working together school staff and interns could collect data for ongoing needs assessments, school census reports, and for the evaluation of programs. A library of instructional modules, reports, curriculum materials, assessment tools, and other resources could be developed.

Action research teams consisting of undergraduate students, interns, classroom teachers, and university faculty could be formed. These teams would identify specific problems to be researched. Decisions would be made and responsibilities assumed for literature searches, documentation, observation, evaluation, data interpretation, and implementation of alternative problem solutions. Results of the action research would be written up, co-authored by teacher education students, teachers, and university faculty. A series of action research reports would be mimeographed and disseminated to teachers, students, and university faculty. Reports could be submitted to professional journals for publication.

The interests and needs of the university would be well-served. Interns would have meaningful learning experiences to test and apply theory, to acquire and extend professional competencies, to learn and grow in the real world of education. University faculty would interface more frequently with practitioners on the front line of education and in the crucible of the real world of teaching, expand their perspectives on the teaching and learning process, and generate new hypotheses for research. The sites that would be available for the cluster assignments of interns would offer a wide range of experiences, making university supervision more efficient.

Such centers would become more than teaching centers—they would truly be centers of inquiry—places where administrators, teachers, interns, and university faculty could share ideas and grow

together through a sustained program of collaborative action research. In the final analysis, what is required for the integration of research and service are imagination and will.

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# Educational Change: The Social and Political Milieu of Special Projects

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Change is a concept often discussed among federal, state, and local educational agencies, but it has been said that in education nothing changes but the appearance of change. Many believe that the largest and most sustained wave of change in American education took place in the fifties and continued through the sixties. But, as Silberman (1970) concluded: "Nothing of the sort happened; the reform movement has produced innumerable changes, and yet the schools themselves are largely unchanged." The Kettering Foundation's report (1973) on secondary education concluded that "the decade of change and innovation in the schools had little or no lasting effect on the curriculum or the quality of teaching and learning."

Assuming that one accepts these premises, the question follows: Why is this so? A number of reasons are advanced. Some observers argue that we have relied too much on the research, development and diffusion (RD&D) paradigm, and that it is inappropriate as a change process (Goodlad, 1975; House, 1974). Others maintain that the RD&D paradigm is poorly implemented (Havelock, 1971; Pincus, 1974; Rivlin, 1971), while some point to the notorious difficulty of changing teaching habits (Orlosky & Smith, 1972). However, there are many who seem optimistic about the RD&D model (Clark, 1976; Clark & Guba, 1972; Howe, 1976; Krathwohl, 1977). This chapter describes the social and political milieu in which federal and special projects operate. The environmental contexts discussed are not unlike those of projects discussed in chapter four. Relevant literature is reviewed on the process of change, resistance to change, and several strategies for implementing change-oriented projects.

## CHANGE VIA EDUCATIONAL RD&D

Many educational RD&D initiatives and federal efforts have been concerned with changing state and local agencies through the use of research findings. One such example is the Teacher Corps research

adaptation program. Within a four-year timeframe, this program funded a number of projects deliberately designed to adopt or adapt validated research findings to their local schools. However, adaptation of research findings to "local needs" was not the ultimate goal. The projects were distinguished from "service-oriented" projects by their emphasis on verifying claims made for innovative ideas, and disseminating their findings to audiences having similar needs.

Implicit in their goal, as with other RD&D models, was a change process that included the following steps: orientation, acceptance of the idea of change, experimentation, adoption, adaptation, implementation, and institutionalization. As demonstration projects focusing on a total school, much of their success was judged on the extent to which they disseminated their products and processes to others—that is, the adoption by persons or systems beyond the immediate environment. Delineating each of the above steps is beyond the scope of this chapter, but it is important to stress that the process is long and complex, beginning with activities that make the target group aware of the innovation and ending with institutionalization.

There are several assumptions undergirding the concept of research adaptation. One is that numerous educational institutions exist which have similar problems and needs. If experiences of adapting the research findings are consistent with acceptable replication principles, so goes the rhetoric, they will then be exported and used by others.

Another assumption is that bridging the gap between researchers and practitioners is critical to obtaining a more supportive milieu for educational research. For example, Clark (1976) suggests that the process of inquiry has to be brought close to the point of effective action in education, involving the direct participation of practitioner agencies in all processes of educational RD&D. Clark seems to argue for more practitioner involvement in the RD&D process so they can perceive it as useful to them as they become actively engaged in it. Through research adaptation, research becomes relevant to practitioner needs.

Whether an agency uses research adaptation, RD&D, problem-solving or some other paradigm for change, it is necessary to be clear about the meaning of change. What differentiates change from the the status quo? Another way of asking this question is, what constitutes a significant modification or alteration in behavior that we can call change?

From a sociological perspective, Etzioni and Etzioni (1973) define change as a reformulation of the social structure involving initial

disequilibrium, and the occurrence of a new equilibrium. Lippitt (1973) defines change as any planned or unplanned alteration in the status quo in an organization, situation or process. According to Rosenau (1978), change is the improvement of the status quo resulting from an innovation, and evidenced by a measurable shift in skills, attitudes or behavior by personnel or institutions. Finally, Zaltman and Duncan (1977) define change as an alteration in the way an individual or system behaves as a result of an altered definition of the situation. They contend that a person changes behavior when he or she defines the situation as being different and now requiring different behavior.

Although research adaptation and RD&D are change strategies, neither should be thought of as comprehensive. (Indeed, some might argue that research adaptation is only a component of RD&D.) Both are important parts of a change strategy involving the development of a propensity toward change, on one hand, and the development of ideas, structures, and materials to meet changing needs, on the other.

## RESISTANCE TO CHANGE

Resistance to change is defined as any conduct that serves to maintain the status quo in the face of pressure to alter the status quo (Zaltman & Duncan, 1977). All change falls into the planned-unplanned dichotomy. Our concern is with planned change or reform resulting from the federal government, state, and local agency efforts.

The 1960's and early 1970's produced a plethora of innovations. Massive amounts of federal funds were expended on educational projects during this period, and the emphasis was on research and development of exemplar materials— in some cases almost "teacher proof."

In retrospect, the project developers may not have given sufficient attention and resources to effective diffusion strategies for their products. Mort (1964) suggested that diffusion of new educational ideas may take up to 15 years. Studies by Carlson (1965) and Havelock (1971 ) reveal that the time lag is at least 10 years.

Hearn (1970) suggests that educators can learn from the field of agriculture. Although certain key elements in the agricultural system are missing from the educational system—the bigger the crop, the higher the income— accountability in education, coupled with performance contracting and differentiated staffing will make a difference, according to Hearn.

From his question, "When Sugar Daddy's Gone, Does Baby Starve?" a study of the adoption rate of ESEA Title III innovations after federal funds end, Hearn (1970) concluded on the basis of superintendent's self-reports that 85 percent of the projects would be continued. However, 41 percent of the superintendents said their projects were to be continued at a lower level. Eighteen percent of the projects, as indicated by superintendents, were being expanded beyond their original scope. This raises the issue of acquiescent response bias. Are we to believe superintendents in view of Berman and McLaughlin's (1978) conclusion? That is, some school districts were found to be opportunistic when going after federal funds, while others were, indeed, looking for resources to solve local problems.

Orlich (1979) examined Hearn's (1969) original study and found "a most significant discrepancy" between Hearn and the Rand study (Berman & McLaughlin, 1978). Orlich maintains that the Hearn study is, "a misinterpretation of the highest magnitude to Congress," because his questionnaire had instrument bias of four positive and only one negative in the five response categories. Orlich believes that from a random set of responses, 80 percent is expected to be positive as a result of instrument bias alone. Orlich labels the findings as political expediency conducted by an advocate for a governmental program.

The above argument raises the question, "What constitutes a significant modification in behavior that we can call change?" Obviously, one's perspective of this question is greatly influenced by political and social orientations. Therefore, it is necessary to speak of macro and micro changes in order to be specific about what did or did not happen, or whether federal funds have made a difference.

Orlosky and Smith (1972) studied macro change efforts of the past 75 years to determine their origins. It was found that while most changes originate within (internal) education, changes having their origin outside the education field had a higher success percentage—i.e., 93 percent for external ideas compared with 64 percent for internal. From the internal-external dichotomy, they classified changes as instructional, curriculum, and organizational and administrative. There were both successes and failures in each of these areas.

While there was resistance to change in all areas, organization and administration experienced it most, evidenced by fewer changes or "changes" that were not implemented (Orlosky & Smith, 1972). Two-thirds of the changes in organization and administration originated within the education field, half of the curriculum changes

came from within the field, and all successful changes in instruction were from within the field. Admitting that it is difficult to change teaching habits, they conclude that the public school is more responsive to change than is generally conceded. Orlosky and Smith offer several recommendations which appear to be of value to change agents and decision-makers seriously concerned with change.

One source of resistance to change or innovation may occur when the power or influence of collaborating agencies is threatened (Dalton, et al., 1968). For example, one of the most difficult problems to overcome when two or more agencies enter into a work arrangement is the belief on the part of individual agencies that they will lose control over decision-making. Such is also the case among individuals or departments within an organization.

Zaltman and Duncan (1977) relate an experience they had with an organizational development program with schools. Based on survey data analyzed by teachers, principals, and district-level personnel about their district, teachers made recommendations to the principals and district-level personnel regarding the possible solutions to problems. Some of the strongest resistance to the change program came from the principals. Principals perceived the program as increasing the decision-making power of teachers and taking away their authority.

A real resistance to change can result from the complexity of technological change and innovation. This resistance is often accompanied by the absence of the necessary technical or human skills to implement the change adequately. Distrust of outsiders or the unwillingness to involve outsiders, such as consultants who can demonstrate or explain the application of technology, is yet another source of resistance to change (Zaltman & Duncan, 1977).

Zaltman and Duncan document other forms of resistance to change. They include such barriers as : absence of good communication systems, the so-called "not-invented-here" syndrome, lack of clarity about the behaviors required by a change or innovation, and a host of psychological barriers to change.

## THE FEDERAL GOVERNMENT AND CHANGE

During 1962-72, the United States Office of Education's budget increased from $477 million to $5.5 billion (House, 1974). Mary Berry, Assistant Secretary for Education, requested of the Congress $268 million for educational RD&D for fiscal year 1978 (Berry, 1977). It was projected that the Office of the Assistant Secretary of Education would spend $19 million; the Office of Education, $140; and the

National Institute of Education, $109 million. The NIE was given the primary federal role for coordinating educational RD&D in 1972.

Kirst (1974) studied the growth and limited influence that increased federal funding has had. He maintains that there are six major modes of federal influence:

1. general aid with no strings attached;
2. categorical aid to earmarked areas of federal concern, such as funding of the National Defense Education Act;
3. regulation by certification, licensing, and imposed standards;
4. discovery and use of knowledge as in research and development activities;
5. provision for services such as technical assistance or consultants;
6. moral persuasions as exerted through speeches and publications.

Federal funds have been used to provide a wide variety of services, particularly remedial instruction in basic skills. By 1972 the Office of Education had 37 separate authorizations supporting reading programs (House, 1974). The programs which emanated from the authorizations were not much different in method and content from those that existed previously, according to House. The funds bought "more of the same" and the innovations rarely were found in classrooms.

One of the primary reasons for the lack of change in schools, according to House, is the government's policy of "central national goals for R&D" as opposed to "distributed national goals for R&D." For central national goals, the federal agency not only sponsors research and development, but it is also the client. On the other hand, if the federal government established a position of distributed national goals for R&D, programs would be characterized by local determinants in the nature of the programs, approach to solutions, and their anticipated consequences.

Another reason for little discernible educational change is the inadequacy of the R&D paradigm. House (1974) argues that it strips the practitioner of initiatory power, and treats him/her as passive. The RD&D paradigm places much attention on marketing research and puts the practitioner in the position of a consumer whose choice is only to buy or reject a piece of goods.

A number of practitioners and researchers find fault with the RD&D paradigm for one reason or another (House, 1974; Pincus, 1974; Rivlin, 1971). House is critical of the RD&D paradigm because it lacks personal contact. He says that the paradigm assumes that the

TABLE 1
RESEARCH AND DEVELOPMENT OF CHANGE*

| | RESEARCH | DEVELOPMENT | | DIFFUSION | | ADOPTION | | |
|---|---|---|---|---|---|---|---|---|
| | | Invention | Design | Determination | Demonstration | Trial | Installation | Institutionaliztion |
| OBJECTIVE | To advance knowledge | To formulate a new solution to an operating problem or to a class of operating problems, i.e., *to innovate* | To order and to systematize the components of the invented solution; to construct an innovation package for institutional use, i.e. *to engineer* | To create wide spread awareness of the invention among practioners, i.e., *to inform* | To afford an opportunity to examine and assess operating qualities of the invention, i.e., *to build conviction* | To build familiarity with the invention and provide a basis for assessing the quality, value, fit, and utility of the invention in a particular institution, i.e., *to test* | To fit the characteristics of the invention to the characteristics of the adopting institutions, i.e., *to operationalize* | To assimilate the invention as an integral and accepted component of the system, i.e., *to establish* |
| CRITERIA | Validity (internal and external) | Face validity (appropriateness<br>Estimated viability<br>Impact (relative contribution) | Institutional feasiblity<br>Generalizability<br>Performance | Intelligibility<br>Fidelity<br>Pervasiveness<br>Impact (extent to which it affects key targets) | Credibility<br>Convenience<br>Evidential assessment | Adaptability<br>Feasibility<br>Action | Effectiveness<br>Efficiency | Continuity<br>Valuation<br>Support |
| RELATION TO CHANGE | Provides basis for invention | Produces the invention | Engineers and packages the invention | Informs about the invention | Builds convictions about the invention | Tries out the invention in the context of a particular situation | Operationalizes the invention for use in a specific institution | Establishes the invention as a part of an ongoing program; converts it to a noninnovation |

*Adopted from E. R. House, T. Kerins and J.M. Steele. "A Test of the Research and Development Model of Change," *Educational Administration Quarterly, Vol. 8*, No. 1, 1972.

innovation will be invented in one place, developed, and passed along the chain (see table 1). Even assuming a passive consumer, such a sequence of events is unlikely. For one reason, the large -scale division of labor into research, development, and other interest groups almost assures that the scheme will not work. Also, the RD&D model attempts to put together pieces of several separate and distinct social systems such as researchers, and to invent whole new ones, such as developers and disseminators, to link the two together (House, 1974).

Rivlin (1971) believes that health, education and welfare programs have failed because they were not designed to learn what was effective and what was not. The large-scale categorical programs did not produce data to show what inputs are related to outputs. There were no control groups, no appropriate experimental design, or any other facets of an experimental program because the programs were not set up as experiments. In her argument for performance standards, Rivlin contends that innovations must be tried under a variety of circumstances—i.e., systematic experimentation. Under her scheme, individual project leaders would follow the plans and agree to use common measures of what is accomplished so that results can be compared.

Pincus (1974) who has contributed to much of the federal government's thinking in this area, believes the most common complaint about the RD&D community is that innovations are not implemented as prescribed. The reasons he cites are: RD&D organizations do not provide sufficient guidance, teachers and administrators do not accept the "obligation to change their behavior patterns," schools do not know how to implement, and "verbal adoption" is often sufficient. Concluding that the only control the federal govenment has is the unlikely one of withdrawing funds, Pincus suggests five emphases in RD&D policy for encouraging adoption and implementation of innovations: large-scale experimentation, collaboration between RD&D agencies and education leadership networks, case studies of successful innovations, research on the existing pattern of school incentives, and trying out methods of restructuring the incentives.

One major difference between Pincus and Rivlin concerning large-scale experiments is that Pincus advocates the study of long-range, unintended effects on the school system rather than looking at performance measures. For closer collaboration with practitioners, Pincus recommends that: RD&D organizations work with administrators and teachers during development, RD&D organizations conduct more training, RD&D organizations understand regional

and national influence networks, and RD&D personnel work closely with school staff during implementation.

Research, development and diffusion labs must assume some, but not all, responsibility for the disquieting results of adopting innovations. It appears that as satellite agencies of NIE, they find themselves in a Catch-22 situation. As indicated, NIE has become the client as well as the sponsor. House (1974) points out the refusal of NIE to grant autonomy, even of a minor sort, by keeping a tight grip through extreme supervision from Washington and uniform annual budgeting procedures (approximately 33 percent earmarked for labs) keeps labs responding to whatever winds blow in Washington and away from attending to the problems of local school personnel.

As House accurately points out, the winds shift often in Washington. The succession of federal programs is guaranteed by the bureaucratic career pattern and by continuously shifting political coalitions. Gallaher (1970) refers to many bureaucrats as persons who have no sense of history or respect for programs begun before their entry upon the scene, but who are eager to push their own pet projects to 'make their own mark' in Washington. Every new federal bureaucrat must promote and become identified with an individualized innovation program to secure career advancement.

## LOCAL AGENCIES AND CHANGE

Local school systems are not without fault in their failure to adopt innovations. Historically, school administrators have diverted federal funds to items in their own budget, treating federal programs as windfall money that may soon evaporate. Berman and MacLaughlin (1975) label such administrators as opportunistic in their purpose to acquire federal funds and question whether they ever are seriously motivated to solve local problems with these resources.

Most innovative federal programs disappear after a few years, if indeed they are ever implemented, only to be replaced by new ones. In practice, local officials are not inclined to worry much about whether national, vaguely defined, and ill-administered priorities are being met.

Many observers of the education system are doubtful that it can be revitalized. However, Goodlad (1975) expresses a more optimistic note suggesting that "under certain conditions, a school can become a responsive, dynamic entity " in the process of change. This might be done, he thinks, by focusing on a single school and involving its principal, teachers, and students as primary participants. Although

Goodlad acknowledges there rarely is a critical mass of responsible persons within a school culture seriously engaged in change, he contends that it can be changed through a collaborative process. He argues that there must be a "collaborative process of managing the culture of the organization—not something that is done to somebody, but a transactional process of people working together to improve their mutual effectiveness in attaining their mutual objectives."

Arguing that a single school should be the focus of change, Goodlad proposes a different administrative orientation on the part of district superintendents, their staffs, and also a different kind of leadership style from that which normally prevails. He suggests decentralizing a great deal of programmatic authority and resources and assigning them to the principal.

Goodlad's analogy of superintendents associates them with a general manager of a shipping company with each principal responsible for a ship. Unlike the vision of a "captain of the ship" with absolute authority, his notion is a captain well-versed in modern management skills, participating in a continuous program of professional improvement and a crew participating actively in all aspects of running the ship.

Obviously, this requires a different type of leadership by principals. In addition to possessing more conducive intellectual and psychological orientations, they must reconstruct the "top to bottom" decision-making and social structure of the schools. In most schools, there presently exists a considerable amount of fragmentation. Contact within schools and between schools, particularly among teachers, is severely limited. According to Galtung (1973), the essence of the fragmentation strategy is "to divide and rule."

Since teachers are primary consumers of RD&D products, it seems that principals would view more horizontal contact among teachers as being in their interest, particularly their career pattern, to promulgate new ideas as best they can. In her study of teachers' classroom leadership styles, Lieberman (1971) concluded that "the principal can provide a powerful leadership role in changing the school culture by attending to the various means of organizing the school to look outside its walls, to work toward shared decision-making, and to consistently provide for the support and needs of the school faculty.

## SCHOOLS OF EDUCATION AND CHANGE

The role of schools of education in educational change and innovation is not clear. Most people think of schools of education as

teacher preparation institutions, but with a surplus of teachers and no indication of increased demands for years to come, they appear to be superfluous. Joseph Froomkin (1978), Director of the Educational Policy Research Center for Higher Education, describes the problem of colleges and universities by saying that the next 10 years "will try the souls of those connected with higher education" and that "the 1980's may well become the Dark Ages for colleges and universities."

Whether one accepts Froomkin's prediction or not, post-secondary learning in the decade ahead will no doubt encounter serious problems. Since less turnover among teachers is likely and the average age of those teaching will increase, Goodlad (1975) believes that staff renewal becomes a potentially significant enterprise in which schools of education might be involved.

There are several problems implicit in Goodlad's suggestion. Educational practitioners are demanding that inservice education be conducted onsite, away from the campus. Teachers are unwilling to leave their present jobs while securing advancement for jobs not likely to be forthcoming. What then, is the likelihood of teacher educators leaving the "ivory tower" to provide inservice to teachers within the real world of public schools?

Froomkin's study shows that schools of education which lost enrollment reduced their faculty by one-half in five years (1973-1978). However, the number of full professors scarcely changed. Young Ph.D.'s and untenured faculty found it increasingly difficult to secure either new or tenured positions. These factors have strong implications for the extent to which the critical mass of schools of education faculty will become involved in field-based inservice education or responsive to new and changing practitioner demands. Furthermore, many teachers question the credibility of professors who have been removed from the realities of the classroom for a number of years.

B. Othanel Smith (in press) maintains that schools of education can scarcely hope to cope with the demand for both pre- and inservice training. Arguing that "pedagogical education is what it is, and is what it will continue to be, " Smith says that "they will attempt to do in inservice what they failed to do in the preservice program." Among his proposed reforms are: changing the name from schools, colleges, and departments of education (SCDE) to pedagogical education; creating single purpose institutions that emphasize the education of practitioners, analogous to medicine and law; a complete overhaul of the preservice program; reducing the liberal arts influ-

ence in schools of education; more clinical work in professional schools; and a different timeframe for the preparation of teachers.

## SOME STRATEGIES FOR PLANNED CHANGE

Planned change suggests the involvement of persons using multiple change strategies to influence innovation decisions in a direction deemed desirable by a change agency. The change literature is replete with discussions of the relative importance of internal versus external change agents . For example, Carlson (1965) noted that one of the barriers to educational change is the lack of "a change agent" in schools. Whether one favors an internal or external change agent, Orlich (1979) compares an educational change agent to a successful agricultural extension agent.

Marsh (1979), however, disagrees with this analogy. Speaking of external change agents, he says, that "unlike other fields such as medicine or agriculture, there are no comparable role positions in education." He argues that a medical products salesperson can ply wares upon medical practitioners and support his or her claims with comprehensive laboratory tests. An agricultural agent may sell farm machinery or new ideas using economic arguments alone.

The field of education, according to Marsh, cannot lay claim to a similar role position, nor to a body of valid scientific research findings. There is no comparable change agent role which is readily accepted and respected within school systems. Furthermore, there are few incentives for classroom teachers—monetary or status-giving—to make them want to be involved in using new educational ideas (Marsh, 1979).

In favor of external change agents, Marsh says that internal change agents (principals, teachers, students) working by themselves have limited opportunities within a school to bring about major changes. He indicates that individual teachers are not very successful at diffusing new ideas into their classrooms. There are so many pressing day-to-day problems, not to mention real and imagined sanctions which might be applied against them, that many teachers are content to maintain the status quo.

Marsh maintains that teachers, for the most part, are ineffective in the diffusion of educational ideas. Classroom teachers are not independent professionals but staff members of a stable institution. Unlike external agents, they do not have the resources or the expertise to handle the problems associated with diffusion of an innovation in an ongoing system.

The discussions about external and internal agents *per se* are of

limited use. Diffusion of educational ideas is far too complicated for a single external or internal agent to achieve satisfactory results. It seems important, given the benefit of each, to have both external and internal agents working in a collaborative manner to diffuse educational ideas by linking research and practice.

These two people, working with others, plan the change strategy, set goals, gain authorization to carry out their plans, choose other change agents if necessary, and select the innovations and materials they want to use for change.

Change agents must select their change strategies on the basis of criteria. For example, the greater the magnitude of change (one criterion), the greater the likelihood of resistance to change (another criterion). Similarly, the stronger the felt need for change, the stronger the degree of commitment to an acceptable change is likely to be. Among the possible change strategies that might be employed, while not exhaustive, are four suggested by Zaltman and Duncan (1977): facilitative, reeducative, persuasive, and power.

*Facilitative Strategies*

According to Zaltman and Duncan, facilitative strategies are appropriate when it is assumed that the target group (a) already recognizes a problem, (b) is in general agreement that remedial action is necessary, and (c) is open to external assistance and willing to engage in self-help. Although total consensus is not necessary, the greater the consensus about both means and ends among members of the target group, the more effective facilitative strategies will be.

Kadushin (1958) points out that when clients recognize a problem or need they are more likely to continue working to satisfy that need when the need is initially diagnosed by a change agent. This suggests that an important task for the change agent is to facilitate recognition by providing the necessary tools to diagnose a problem.

When there is disagreement among members of a client system about the appropriate solution to a commonly-agreed-to and collectively-felt need, it may be best to offer multiple solutions. Zaltman and Duncan (1977) refer to this form of facilitative strategy as "solution diversification."

If resistance is anticipated, facilitative strategies intended for the target group as a whole will be relatively ineffective. Facilitative strategies assume openness to change, therefore, they do not include specific techniques for creating openness. Reeducative and

persuasive strategies might be necessary for resisting elements, while facilitative efforts may be appropriate for those who are inclined to change. The rationale for using facilitative strategies, then, is to make it easier for groups to do something they are already committed to by making what is available clear and where and how assistance may be obtained.

*Reeducative Strategies*

Zaltman and Duncan describe reeducative strategies as those intended for planned change where unbiased presentations of facts provide rational justifications for actions. They also are appropriate when power is used to bring about rapid behavioral change. In other words, reeducative strategies are intended to establish over time and subsequent to the power strategy, attitudes or beliefs that are congruent with forced behavioral change.

There are several indices which change agents might look for to determine the appropriateness for reeducative strategies: degree of commitment by the change target, their perceived need for change, segmentation of the target system, and capacity of the client system to sustain change. This information may be obtained through survey feedback and collective problem-solving. If these factors are found to be negative, other change strategies are needed first. Several change strategies may be necessary, each directed at a different segment of the target system.

*Persuasive Strategies*

According to Zaltman et al. (1972), persuasive strategies are "strategies which attempt to bring about change partly through bias in the manner in which a message is structured and presented. They attempt to create change by reasoning, urging, and inducement. Persuasive strategies are commonly used by profit and nonprofit agencies. Similarly, much everyday interpersonal communication contains strong persuasive content. Zaltman and Duncan (1977) offer several principles for determining when persuasive strategies might be used:

- When the client is at the evaluation or legitimation stages of the adoption process.
- When the magnitude of change is great and is perceived to be risky and socially disruptive.

- When the change cannot be implemented on a trial basis, is difficult to understand, and has little visible advantage.
- When the client is not committed to change.

*Power Strategies*

Unlike persuasion, power strategies involve the use of coercion to obtain the target system's compliance. Zaltman and Duncan define power as "the ability to change the probability of the target performing some behavior by manipulation or threat of manipulation of the target's outcome." Thus a power strategy entails the use of coercion to alter the probablity of a target performing some behavior desired by a change agent. The use of such power may result in both direct and retaliatory costs to the user.

For example, there is a cost of rewarding the target system if it complies with the request or punishing the target if it does not. There may be additional costs in the forms of retaliation on the part of the target. That is, when the change agency is dependent on the target for attainment of its goals, the target also enjoys some measure of the power over the change agency. The degree of dependency of the target system and the ability to exercise power by the change agency is based on the obligatory relationship between the two.

As is the case with other change strategies, there are certain considerations for determining whether and when to use power strategies. Some of the more obvious ones are: degree of commitment, perceived need to change, capacity to accept change, capacity to sustain change, magnitude of change, and the like.

Like other change strategies, the degree of commitment is an index of compliance. Power strategies often result in compliance, which suggests a low level of commitment to change. Forced compliance requires surveillance and, in effect, does something to the target rather than with the target. Forced compliance often leads to substandard implementation by the target system. But the rationale is that once behavior has been changed in a positive direction, positive (or less negative) attitude change will follow.

One example of power-induced change is the United States Supreme Court school desegregation ruling in 1954. As Huntington (1968) observed:

> *The most successful and rapid racial desegregation in the United States...frequently occurred when those in power introduced abrupt, firm and irreversible policies without much prior preparation.*

*Such policies brought about effective changes in behavior without attempting to alter attitudes and values. Changes in the latter, however, are likely to follow changes in behavior. A more gradual approach to desegregation did not, on the other hand, increase the likelihood of its acceptance by those in the community opposed to integration.*

*Opportunity and time for preparation of the public for change is not necessarily related to "effectiveness" and "smoothness" of change. An interval of time for change not only may be used for positive preparation, but may also be used as an opportunity to mobilize overt resistance to change.*

## CONCLUSION

The concept of educational change is frequently discussed, but the process is complex and difficult to implement. Federal, state and local agencies have attempted a number of intervention strategies—i.e., research, adoption and adaptation, RD&D—yet many observers maintain that nothing in education changes but the appearance of change.

While the federal government's role in educational change has been significant in some areas of schooling, many efforts have resulted in inadequate and poorly conceived intervention models. Implementation problems are often complicated by opportunistic public school administrators whose primary purpose is to acquire federal funds, and teachers who resist changing teaching habits. Coupled with this is the unsettling situation which teacher training institutions find themselves in. That is, many colleges and universities are attempting to build upon or replicate programs for inservice training that had limited success for preservice training.

Several change strategies are offered for implementation of federal and special projects: (1) facilitative strategies, (2) reeducative strategies, (3) persuasive strategies , and (4) power strategies. Situations are described for which the strategies are believed most appropriate. However, in most situations it may be necessary to use multiple strategies or solution diversification.

Although the purpose of this chapter is to describe the social and political context in which most special projects operate, it has particular implications for projects discussed in the following chapter.

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# Research Adaptation As A Change Process: A Retrospective Inquiry Of The Congruence Between Policy And Implementation

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In 1975, Teacher Corps funded eight projects to adapt validated research findings to local school settings. Seven projects were funded in 1976, and eleven more in 1977. Five of the projects funded in 1977 were among the 1975 group. As a result, 26 projects (five of which received two grants) were funded over a four-year period, each grant for two years.

The projects were required to demonstrate a collaborative process involving a school district, a teacher education institution, and the local community. In every instance, the cooperating university served as a primary grantee while local schools were the targets of change. The change processes employed by various projects included implementation of research on curricular findings, teaching and learning styles, team teaching and differentiated staffing, open education, and diagnostic and prescriptive teaching. Most projects focused on teachers as the target of change. Even those that implemented research directly intended to improve student achievement (e.g., Precision Teaching, Mastery Learning, and students-tutoring-students) also engaged in activities to modify teacher behavior.

Sixteen projects had elementary school concentrations, four concentrated on middle or junior high schools, three on senior high schools, two on elementary through senior high schools, and one on a vocational school.

This chapter examines implementation strategies used by projects, and the relationship of those strategies to the goals of the national program and the intent of Congress.

## RETROSPECTIVE INQUIRY OF RESEARCH ADAPTATION PROJECTS

A retrospective inquiry was used to analyze and synthesize data from projects involved in adapting research findings to local school settings. First, relevant documents were examined; i.e., papers writ-

ten by project personnel for monographs, newsletters, and presentations at professional organizations. Second, key persons on the project staff were asked to write papers on the relative impact and change that resulted from project implementation. Using a uniform format, authors prepared papers for two conferences. The conference presentations were interactive; participants gave authors constructive feedback on their respective papers. In some instances, major revisions were made on papers. For others, particularly where authors had rigorously followed the guidelines, only minor revisions were made.

Third, a group of educators and researchers was commissioned to synthesize papers from these projects. This group also used a common format for its synthesis activity. Their efforts resulted in two documents: a journal on *Impact Studies* (Morris, et al., 1980a), and a journal on *Change Studies* (Morris, et al., 1980b).

Another source of data was a questionnaire administered to project directors. Of the 26 projects, 18 responded to the questionnaire.

## TEACHER CORPS POLICY FOR IMPLEMENTING CONGRESSIONAL INTENT

The Teacher Corps program is legislated and funded by Congress "...to strengthen the educational opportunities available in schools having concentration of low income families and to encourage colleges and universities to broaden their programs of teacher preparation and to encourage institutions of higher education and local education agencies to improve programs of training and retraining of educational personnel..." (Title V, Part A). Teacher Corps chose to implement the congressional intent of PL 94-482 by establishing five strategies to provide staff development for educational personnel. Policy decisions to implement the five-strategy approach began in 1975, and ended in 1979 with Cycle 12 projects. One of the training and retraining strategies, which sets the scope of this paper, was the "systematic adaptation of validated research findings." The others were, alternative schools, interdisciplinary training, training complexes, and competency-based teacher education.

Since no baseline data exist for comparing the research adaptation strategy with the other four, discussion of projects within this framework is made in relationship to federal or special projects in general. Indeed, the purpose of chapter 3 was to describe, in general terms, the context in which most special projects are implemented (or not implemented). That is, they all experience varying levels of resistance, political, and social motivations. Moreover, implemen-

ters usually decide on one of several strategies for implementation or for affecting change.

There are a number of strategies used for implementing policies. For describing the outcomes of projects in this sample, reference is made to the two strategies most widely discussed in the literature on change and change processes: *programmed implementation* and *adaptive implementation*.

Berman (1980) describes programmed implementation as a well-specified plan that has clear and detailed objectives, clean lines of responsibility and limited participation in policy-making, and requires minimum discretion for all levels of implementation. The ideal, to use an extreme example, is to make an initial decision on policy that includes an automatically executed implementation plan. Except for minor adjustments aimed at keeping the program on track, policy makers would have no need to deal with implementation because this approach assumes that policy prescriptions and guidelines will be followed by developers and deliverers.

In contrast, adaptive implementation seeks only general, perhaps vague, or even tacit agreement of goals. This approach allows people having different values to be able to agree on means or vague objectives through a process of participation and negotiation.

Adaptive implementation also calls for the active participation of relevant actors, and is said to afford two benefits (Berman, 1980). First, it is believed to enhance problem-solving during implementation, because diverse participants are assumed to bring more information and more points of view to bear on the situation. Second, much of the organizational and management literature maintains that when people are active participants in decision-making, they are motivated to do a better job.

A fundamental distinction in policy analysis is found between policy formation and policy implementation, or the distinction between policy causes and policy effects. The distinction is relevant to the concept of policy failure and success. Policies can be failures in the sense of never being adopted, or in the sense of being adopted but having unsatisfactory effects. The primary motive of this study is an inquiry of the extent to which projects adopted either the programmed or the adaptive mode. Instead of concentrating on a dichotomy of project failure versus project success, an attempt will be made to examine the relative cause and effect of the implementation strategy used.

It seems reasonable to infer that the policies of Teacher Corps/Washington were intended more for adaptive implementation than for programmed implementation. At least they fit the general and

vague goals characterized by adaptive implementation. Further, examination of Teacher Corps literature and documents reveals that projects were required to involve diverse populations in their operation and implementation.

The language which established the framework for research adaptation projects is as follows:

> *The research-based training framework depends on the presently available body of results and findings from research concerning learning and educational processes, and the incorporation of a program design for training educational personnel....Sources of research findings include basic and applied research studies.*
>
> *Training in hypothesis generating and testing in addition to applications of reported findings should be emphasized. Training based on organizing the results of educational research grows out of two concerns. First, is the need to encourage educational practitioners to organize and implement research ideas, findings, and products...to deal more effectively with everyday education problems and their solutions....Second is the need to accelerate the influence of theory and research in the design of teacher training programs....*
>
> *Five Teacher Training Frameworks*
> 1975, p.19

The statement further instructs projects to: (1) conceptualize program design, evaluation, and operation on a firm basis of available theory and research, (2) increase the use of research results as a basis for selecting intern, experienced teacher and community volunteer behavior for emphasis in training programs, and (3) extend the use of research attitudes and knowledge to the activities of participating educational personnel, including community representatives.

One can see that the above guidelines are far from prescriptive which would be the case if programmed implementation were intended. In fact, shortly after funding of projects for the research adaptation thrust, informal discussions and personal memos indicated that some key project staff lacked the necessary understanding and direction for their implementation tasks.

Criticisms of the program (Washington) policy-makers should be tempered, because the general goals could have been an attempt to move away from "central national goals for RD&D" and toward "distributed national goals for RD&D" as described by House (1974). If that was the rationale, it could then be argued that the philosophy and intent of the policy-makers were consistent with adaptive implementation. That is, the establishment of the opera-

tional process allowed the policy to be modified, specified, and revised—in a word, adapted—according to the unfolding interaction of the policy with its institutional setting.

There are few hard and fast rules about what makes for successful implementation. What works in one setting often fails in another. Local factors and characteristics unique to specific implementation contexts have a strong and direct effect on outcomes. Many of these factors, such as commitment to policy, and institutional support, are difficult to quantify. Furthermore, it is especially difficult to specify their interaction with other variables. As was the case with some of the research adaptation projects, successful implementation did not follow a general mode, but instead, it unfolded in particular settings.

Fixed targets and procedures are impossible in policy situations where large change is desired, conflicts over goals and/or means exist, many loosely connected participants are involved, and the environment is unstable (Berman, 1980). Such was the case with Teacher Corps projects, and if we are to believe Berman, the adaptive strategy would have produced more success—even though it resembles a disorderly learning process—than the programmed approach.

## IMPACT ON TARGET POPULATIONS

Pragmatically speaking, the research adaptation projects did some important things for their target populations. Emphasis on collaboration caused closer working relationships between teacher training institutions and public schools. In some instances, parents became involved in the schooling process in ways that did not exist prior to the project. Both financial and human resources were made accessible to institutions that they otherwise found unavailable. While these factors are difficult to quantify they, nevertheless, represent important, quality benefits.

The following is a discussion of the research adaptation projects in terms of whether their implementation strategies related to the programmed or adaptive mode. Before making the associations, it should be pointed out that unlike many comparisons, the purpose of this discussion is not to debunk, disprove, or discount the work of project implementers. We found that the implementation process is not initiated by simply choosing between a programmed or an adaptive approach. The political and social contexts of these projects were often so complex that a mix of programmed and adaptive strategies was necessary.

At the beginning of Teacher Corps' Cycle 10 (i.e., the first cycle for research adaptation projects), some project implementers bounced back and forth between the conceptual plan in their proposals, and the pressing demands of their target groups. Out of frustration, some did nothing, resulting in dismissal of the project director, dissention between preservice and inservice participants, community dissatisfaction, and the like. Several projects suspended the original goals, at least for the time, and assumed an adaptive approach.

## RESEARCH ADAPTATION PROJECTS AND ADAPTIVE IMPLEMENTATION

The Stanford University/Hoover Junior High School project was one which adapted to the need of professors to conduct long-term research studies, and, at the same time, responded to teachers who sought immediate answers to daily crises (Roper & Jung, 1980). By providing staff development to teachers concerned with developing an open education concept, a collaborative model was implemented involving Stanford faculty members, and Hoover administrators and teachers. Delivery of staff development was performed through work/study teams organized around: (1) language arts, (2) social studies, (3) mathematics, (4) physical education, and (5) "innovative" areas (i.e., bilingual education, multicultural education, community involvement, use of open space).

Graduate assistants were the key link between the Stanford and school faculties. Roper and Jung (1980) maintain that a key implementation factor was learning to accept practitioners as colleagues of university faculty, and not just as clients. This was done by building an environment of give-and-take essential to collegial relationships, e.g.: (1) attention to changing needs in the school, (2) building trust and credibility, (3) balancing short-term and long-term goals, (4) increasing the decision-making power of practitioners, and (5) learning to be patient.

An important step in the model was the summary of pertinent literature and research, conducted simultaneously with an inquiry into teachers' perceived needs. Needs assessments provided the structure for both tasks. The goal was to find research that would provide useful information in dealing with high priority needs of Hoover faculty as well as to identify field sites and practitioners who could help.

*Results*

Roper and Jung (1980) infer that the Stanford project facilitated mutual adaptation in school environments that previously lacked the pre-conditions of motivated participants and a healthy organizational climate. They further assert that through the project, specific strategies were implemented to achieve mutual adaptation. Roper and Jung found that when the project staff and university faculty modified their goals to meet the needs of involved practitioners, they, in turn supported the research goals of the project.

Berke (1977) maintains that the Stanford work/study teams helped develop, implement, and evaluate instructional strategies using a detailed ethnography of the school. In-depth studies were done by the following teams: math, language arts, physical education, multicultural, and open space. According to Berke, the project efforts resulted in a smooth transition to the new open space school, greater teacher collaboration, and improved instructional strategies in areas where study teams were formed. She argues that a comparison of several open space schools in the Bay Area showed Hoover Junior High as the only school that did not erect walls after a year of implementing the open education concept.

The Michigan State University/Lansing School District (Teacher Corps project) is another example of adaptive implementation. Michigan State University and Stanford University project designs were similar in that MSU established developmental teams in the following curricular areas: reading, math, multicultural education, and social-emotional education. The teams were comprised of preservice teachers, inservice teachers, and teacher educators. The adaptive approach used by MSU was based on several assumptions. First, teachers should be involved in every phase of research adaptation, teaching, documentation, dissemination, and curriculum development. Second, since neither teachers nor teacher educators are fully aware of the potential impact of various research findings or theoretical conceptions of classroom teaching, they both learn from studying ideas together. Third, teachers and teacher educators both have specialized, but different, expertise which can illuminate the practical study of research and its adaptation for curriculum development. Finally, teachers and teacher educators can learn more together than they can separately as their collective efforts create a synergistic effect (Barnes, Putnam, & Wanous, 1979).

The MSU research adaptation process contained three phases, each containing several tasks. For instance, Phase One included the tasks of organizing a conceptual framework (to guide their search for

relevant research and related literature); developing units of instruction (involving teachers and teacher educators); classroom trials of planned units (with teachers and teacher educator teams implementing lessons with students); and documentation/evaluation and dissemination of activities. Phase Two was an expansion of Phase One in that the same tasks were used with a new group of teachers and teacher educators. Additionally, Phase Two placed emphasis on dissemination where teachers played a primary role. Phase Three was designed for institutionalization or continuation of Phases One and Two in which the original participants continued their work with new sets of teachers and teacher educators.

*Results*

From questionnaire and interview data, Barnes, Putnam, and Wanous (1979) maintain that efforts of the MSU project resulted in better teaming relationships between the school staff and university faculty. Further, there was an impact on the ability of both teachers and teacher educators to disseminate teaching and learning processes. Students were reported to have benefited from having several concerned individuals available, and received more individualized assistance with particular learning problems.

Barnes (1979) points out that methods and practices developed by the project have been incorporated into regular math, reading, social studies, and social-emotional courses. She says that project demonstration of products, processes, and practices ensures continuation of benefits to both the school district and university.

Pine (1979) indicates the University of New Hampshire-Portsmouth Teacher Corps project began its first year with a research orientation to adaptation. Translated into Berman's (1980) implementation paradigm, this approach is closely related to programmed implementation. That is, project implementers identified sound research that seemed related to general or widespread school problems, assuming that the research would be readily acceptable to the local project-based school. However, as the project matured, a school problem-orientation (adaptive implementation) emerged. According to Pine, the project moved from a linear model of adaptation to an ad hoc, responsive model based on emerging and changing teacher needs.

In discussing the "research adaptation and systematic ad hocism" approach, Pine (1980) describes four components of their implementation approach: linear systematic sustained adaptation, ad hoc school problem adaptation, case study process adaptation, and information inundation (pp. 10-11).

The "linear systematic and sustained" component was established during project initiation when implementers identified research findings in psychological education and counseling psychology. They later adapted the findings in a sustained and systematic way throughout the life of the project. The "ad hoc school problem" component exemplified a problem-solving approach in which individual teachers defined practical problems and initiated their own research to address the problems. Action research conducted by the teachers included case studies, retrospective analysis, analytical studies, correlational studies, experimental designs, and descriptive investigations.

A third component which Pine (1980) describes as being used by the research adaptation project is the case study. This concept was designed to validate the use of specific research findings; to provide a guide for directing the application of research findings; and to develop an increased capacity for teachers and the project staff to make research adaptations and educational change possible. Finally, information inundation of research findings was used to address concerns of involved teachers as well as non-participating teachers.

*Results*

Pine (1980) gives a list of positive findings that resulted from the University of New Hampshire-Portsmouth project. Among them are:

1. The junior high school was organized into a schools-within-a-school program.
2. The majority of teachers changed their attitudes about heterogeneous grouping, moving from a negative resistant posture to a more supportive position.
3. Teachers are more receptive to having teacher education students in their school.
4. The 12 most actively involved teachers have individualized instruction; two teachers organized for team teaching characterized by individual learning stations, small group instruction, individual peer tutoring, and the like; six teachers incorporated moral dilemmas into their curriculum; and 12 teachers incorporated learning centers into their classrooms.
5. Fourteen teachers successfully completed action research projects, enabling them to bridge the gap between theory and practice.

Pine points out that the project was unable to engage 11 of 55 teachers, and 13 others were only peripherally involved. He further notes that the project had little, if any, impact on the university's education department.

The three examples just described provide "snapshots" of projects using an adaptive implementation approach. Discussion of these projects does not preclude the use of adaptive approaches by others in the sample. Instead, the above strategies appear to be closely related to Berman's (1980) description of adaptive implementation. The following discussion draws examples of the relationship between several research adaptation projects and programmed implementation.

## RESEARCH ADAPTATION PROJECTS AND PROGRAMMED IMPLEMENTATION

Three research adaptation projects that used programmed implementation were those at Glassboro State University, San Jose State University, and Trenton University. These projects assessed the needs of participating school personnel during proposal development, developed goals and objectives, and proceeded to implement the model with little or no modification from the original design.

On the basis of needs assessment, the Glassboro State University/Camden School District adapted Precision Teaching as a measurement system to improve students' performance in arithmetic facts, reading, and spelling. Implementers of the Glassboro project had a well-specified plan with clear and detailed objectives, clean lines of responsibility, and limited participation in policy-making by teachers. Brent et al. (1980) note that while Precision Teaching can be used in traditional situations, teachers involved in this project were responsible for learning a new measurement system for charting student progress, and developing new teaching materials and procedures. It appears that an initial policy decision was made that included an automatically executed implementation plan.

### *Results*

Brent et al. (1980) argue that Precision Teaching as a research adaptation strategy resulted in substantial, measurable learning of basic arithmetic, spelling, and reading skills of students in the Glassboro project. They point out that as a result of significant improvement in students' arithmetic skills, the school district

adopted Precision Teaching on a system-wide basis. Data on reading was not analyzed and available at the time of the report by Brent and others (February, 1980).

Another instance in which the programmed approach was used was that of the San Jose State University/Alum Rock Elementary School District. During the first two-year cycle of this project, five components were to be implemented, each of which involved adaptation of a specific body of research (Spaulding, 1980). These research components were decided upon prior to the selection of the participating school. According to Spaulding, the original needs assessment for the project was a general one, relating concerns of the school district to the research available for adaptation.

Implementation of the research depended on specific technology, i.e., computer use at the Far West Laboratory and Stanford University. Because of difficulties in getting computer programs designed and operating, minimal use by teachers, and other complications, the computer-assisted feedback and documentation systems were eventually discontinued. If we were to point to cause and effect relationships, two possibilities exist: (1) a valid technology was poorly implemented, and (2) a well-executed policy was based on invalid theory. One might argue, based on the projects' research or theories (i.e., the Coping Analysis Schedule for Educational Settings, CASES; Spaulding Teacher Activity Recording Schedule, STARS; and Joyce's Models of Teaching), that poor implementation of technology resulted in discontinued use. However, it is possible that the decision to use a programmed strategy created the implementation problems.

*Results*

The San Jose project implemented both 10th and 12th Teacher Corps cycles. Spaulding (1980) indicated that the research adapted by the project during 10th cycle had little generalized impact which illustrated the implementation of either the CASES management prescriptions or the Models of Teaching. Although final assessment of the 12th cycle was not completed at the time of his report, Spaulding noted that a retrospective, ethnographic inquiry was being performed. Preliminary findings indicated that: (1) inservice teachers improved their management skills, (2) all teachers reduced aggressive, annoying, and disturbing student behavior to near zero in teacher-directed settings, and (3) resistant, delaying, and passive student behavior improved in teacher-directed settings. Additional findings showed there was very little withdrawn student behavior

in either teacher-directed or non-teacher-directed settings. The findings for distractible behavior were also dramatically reduced. Students in grades 1, 2, 4, 5, and special education became more attentive during instruction.

Paradoxically, only one teacher elected to use STARS as a self-analysis, feedback system, and according to Spaulding only one intern achieved the objectives of the CASES and STARS training systems.

A third example of programmed implementation is the Trenton University/Trenton Public Schools project. The decision was made to adapt research on reading comprehension skills for teachers at Wilson Elementary School. As a result of "brainstorming" sessions to assess needs of the school, teachers decided that reading comprehension was the top priority. Following extensive inservice on Barrett's Taxonomy, teachers were engaged in developing instructional materials which complemented their use of commercial materials. Walthew and d'Ambrosi (1979) maintain that the teaching staff was involved in the decision-making process throughout the life of the project.

Clearly the programmed approach was congruent with the situation at Trenton. Coupled with the situational factor was a process that allowed some teacher discretions. Indeed, one might argue that the Trenton project used a mix of programmed and adaptive implementation.

*Results*

The Trenton project reported having impact on two target groups: (a) students, teachers, and administrators at the school, and (b) college faculty (Walthew & d'Ambrosi, 1979). For 398 pupils in grades 2-6 receiving instruction in reading comprehension skills, a posttest yielded the following information: Detail, 90%; Main Idea, 69%; Sequence, 76%; Cause and Effect, 67%; and Comparison, 65%. The percent of pupils that passed the test (with 80% correct as the criterion) was 73% when all five areas were averaged. Pretest data were not provided for baseline comparison.

Teachers of the Trenton project adopted the reading comprehension program as evidenced by required skills in the classrooms, the development of instructional materials, and planning and implementation of several workshops relative to the program. The principal provided support to the reading project in a number of ways, e.g., by being knowledgeable about the project, approving plans, providing meeting time for the staff, etc.

Project impact on the college faculty was registered through the relationship developed with the school staff, and their ability to pinpoint areas for inservice training.

The six examples should present a contrast of implementation strategies used by Teacher Corps' research adaptation projects. More details on these and other research adaptation projects may be found in other documents (Acheson, et al., 1977; Dick, 1976; Morris, et al., 1979, 1980); therefore, the strategies of other projects will not be discussed except to say that in most cases project implementers found it necessary to employ a mixture of elements from both the adaptive and programmed approaches.

## RESEARCH ADAPTATION PROJECTS AS A CLUSTER

While projects in the sample had research adaptation as a common organizer, it is fair to say they employed different implementation strategies. An overwhelming number of projects appeared to have used a programmed strategy with only a few using an adaptive approach. However, there were situations and stages of project implementation which those using a programmed approach temporarily switched to adaptive implementation, or a combination of programmed and adaptive components. Usually this was done during crisis situations, or, at times when the target group demanded that the project become more "relevant."

Project directors and other key project staff found a certain amount of support in their participation in the Research Cluster or networking concept. These meetings and workshops enabled them to openly discuss many problems which they experienced (see sources of resistance and strategies for implementing change in Chapter 3). At times the meetings were concerned with project demonstrations in which the audience provided constructive feedback on implementation procedures. Many concepts and techniques demonstrated were subsequently adopted by other projects within the Research Cluster.

Face-to-face interaction during cluster activities, no doubt, helped clarify vague goals (or policies) upon which research adaptation projects were based. Perhaps the most important aspect of the meetings was the freedom to discuss project problems, without fear of reprimand by superiors and alienation of clients. In other words, the cluster was based on a peer, non-hierarchical relationship in which leadership emerged according to the situation and available expertise.

Interaction at these meetings often provided insight into particu-

lar problems experienced by project implementers. For example, some projects experienced a high rate of teacher turnover, removal of the principal, removal of the project director, or change of target schools, any of which usually resulted in an unstable environment. It was not uncommon for concerns to revolve around conflict over project means and perceived goals/policy. That is, project implementers often raised such questions as, "How do you implement a project with teachers that do not feel ownership in the project?" or "How do you gain cooperation from the school and university faculties when their needs were not assessed or used at the proposal development stage?"

The scope of change was also a source of frustration for many project implementers. It was sometimes pointed out that a Teacher Corps project has so many components that it becomes complex, if not impossible, to implement. Opportunities to discuss these and other issues provided comfort and reinforcement to project directors, if not solutions to their problems.

## ANALYSIS OF PROJECT DIRECTOR QUESTIONNAIRE

The following discussion analyzes data from a *Project Director Questionnaire* (PDQ) administered to 18 project directors. There are 38 five-point Likert scale items, 8 items for multiple response, and 5 open-end questions. A logical clustering of the Likert scale items yielded seven categories: (1) teachers, (2) project administration, (3) institutions of higher education, (4) institutionalization, (5) local education agency, (6) collaboration, and (7) miscellaneous. To ascertain the inter-item consistency of these seven clusters, a Cronbach alpha correlation was computed. Three categories (i.e., teacher, institution of higher education, institutionalization) were all over .80. The collaboration and miscellaneous categories yielded low correlation coefficients which might have resulted from the small number of items contained, i.e., four items for collaboration, and two items for miscellaneous.

Although each of the three questionnaire components or item-types yielded valuable information, perhaps the open-end questions proved the most insightful. For example, in response to the question, "...the greatest impact resulting from the project?" one project responded as follows:

> *From the university's point of view, professors learned to investigate problems that teachers encountered daily. They conducted research studies that were formulated by their exposure to the school.*

**Table 2**
**Continuation of Research Adaptation Projects After Federal Funds Ended**

| Projects | Continued Project at Same level | | Reduced Project | | Discontinued Project | | Continued Project with Another Grant | |
|---|---|---|---|---|---|---|---|---|
| | Sch. | Univ. | Sch. | Univ. | Sch. | Univ. | Sch. | Univ. |
| Florida St. Univ. | | | | | X | X | | |
| West Vir. Col. of Grad. Studies | | | | | X | X | | |
| Univ. of South Florida | | | | | X | X | | |
| Wayne St. Univ. | | | | | X | X | | |
| Emporia St. Col. | | | X | | X | | | |
| San Jose St. Univ. | | | | | X | X | | |
| Trenton St. Col. | | X | X | | | | | |
| Glassboro St. Col. | | | X | X | | | | |
| Stanford Univ. | | | X | X | | | | |
| Univ. of New Hampshire | | | X | | | X | | |
| Miles College | | | X | X | | | | |
| Indiana Univ. | | | X | | | | | X |
| Mich. St. Univ. | | | X | | | | | X |
| Murray State Univ. | X | X | | | | | | |
| Cullman Co. Voc. Center | X | X | | | | | | |
| Univ. of Oregon | | | | | X | | | X |
| Univ. of Wis. | | | | | | | X | X |
| Youngstown Univ. | | | X | X | | | | |

*They began to see problems as teachers saw them. The greatest impact was that more, and in some cases different faculty from the university continued a relationship with the school district and as a result decided to jointly enter into a new federal grant.*

*The greatest impact of the project on the schools was to train teachers to work together on a continuous basis to solve specific problems. These teams continued to function a year after the project ended.*

*A disappointment from the director's point of view was that the whole problem of research adaptation was not solved. That is, the project was successful in getting the professors to perceive reality through the eyes of teachers, but not the reverse. The hope of making teachers applied researchers was not realized.*

However, experiences of another project were opposite from the above perceptions. For instance, the demonstration of action research by teachers was perceived as one of the greatest project impacts. The project director indicated that 15 teachers initiated action research projects addressing classroom instruction, student, and curricular problems. Action research was conceptualized and implemented by this project as a form of staff development.

Table 2 shows the level of project continuation for public schools and universities after federal funds ended. As indicated by project directors, the percentage of projects that were continued at the same level within schools and universities was 11% and 17%, respectively. Fifty percent of the schools reduced project funding and operation as compared to 22% of the universities. Thirty-three percent of the schools discontinued all aspects of the project as did 39% of the universities. A small percentage (6%) of the public schools received another grant allowing them to continue the project, while 22% of the universities were able to continue the project as a result of another grant.

Mean scores for the Likert scale items were calculated in several ways. Mean scores for each of the 38 five-point items were calculated for all 18 project directors in the sample (see Appendix). Means were also calculated for separate cycles, thus allowing comparisons of groups of projects, i.e., Cycles 10, 11, 12 and those with both Cycles 10 and 12. Additionally, means were calculated for all cycles within each of seven categories (see Table 3).

There was no significant difference among groups of projects. Paradoxically, directors with only Cycle 10 projects achieved the highest mean (3.9). Project directors of two cycles achieved means of 3.0 and 3.1 for Cycles 10 and 12 respectively. For Cycle 11 the mean

**Table 3**
**Means and Grand Means of Research Adaptation Projects for the Dependent Variables (Project Director Questionnaire)**

| | N = 3 10th | N = 5 10th | N = 5 12th | N = 5 11th | N = 5 12th | N = 18 10th–12th |
|---|---|---|---|---|---|---|
| **Scale No./Items Surveyed** | M | M | M | M | M | $\bar{X}$ |
| 1. Teachers | 4.1 | 3.1 | 3.6 | 3.5 | 3.7 | 3.6 |
| 2. Project Administration | 3.8 | 3.2 | 3.1 | 3.3 | 3.5 | 3.4 |
| 3. Institution of Higher Education (IHE) | 3.8 | 3.2 | 3.2 | 3.1 | 3.0 | 3.3 |
| 4. Institutionalization | 3.9 | 2.3 | 2.5 | 2.2 | 2.8 | 2.7 |
| 5. Local Education Agencies (LEA) | 4.1 | 3.0 | 3.1 | 3.0 | 3.7 | 3.4 |
| 6. Collaboration | 4.1 | 3.1 | 3.4 | 3.4 | 3.8 | 3.6 |
| 7. Miscellaneous | 3.6 | 3.3 | 2.9 | 3.4 | 2.2 | 3.1 |
| $\bar{X}$ | 3.9 | 3.0 | 3.1 | 3.1 | 3.2 | 3.3 |

score was 3.1, while the mean for only Cycle 12 projects was 3.2.

Project directors perceived their projects as having the most impact on teachers, and in the area of collaboration, with both scales yielding means of 3.6. The LEA and project administration scales each yielded a 3.4 mean. Finally, the institutionalization scale achieved the lowest mean with 2.7.

## CONCLUSIONS

The major purpose of this study was to assess the congruence between policy formulation and policy implementation. Avoiding the value-laden terms, "success" and "failure," we chose to examine the implementation strategies of Teacher Corps' research adaptation projects through a retrospective analysis of relevant documents.

Key project personnel were asked to look back, analyze and write about the extent of impact and change by the project. These papers were then summarized by a group of educators and researchers and published in two volumes of *The Journal of Research Adaptation*: Impact Studies - I, and Change Studies - II. Analysis of the journals and previous publications indicates that undoubtedly, a positive impact was made on target populations. The extent of lasting change (institutions that continued the project after federal funds ended), however, appears less impressive.

We found that most program policies were only partially implemented. For example, project impact on teachers suggests that the "educational opportunities available to children...of low income families" were strengthened as a result of various inservice efforts. On the other hand, few of the institutions of higher education were shown to have broadened their teacher preparation programs, or improved their (re)training programs for educational personnel.

Most of the research adaptation project strategies may be characterized as programmed implementation. That is, projects established goals and objectives and proceeded to implement them with little or no modification. Fewer projects used adaptive implementation in which there was mutual adaptation of project goals and the clients' perceived needs.

A project director questionnaire was used to supplement other data for the study. One is cautioned against generalizing the findings beyond the projects of this sample for two reasons. First, our sample is extremely small. Second, we have only the perspective of project directors. We might have gotten different perceptions, for example, had the clients also been surveyed. Nevertheless, the

questionnaire served our purpose to the extent that information in some of the other documents was verified.

One can speculate that as a result of reseach adaptation projects, a common lesson was learned. Implementers with a strong research orientation, or primarily a pragmatic position ultimately realized that to have ideas adopted or changes instituted, teachers and school administrators must be incorporated in the project in ways they see as helpful to accomplishing their goals more efficiently and effectively (see Acheson, Appendix). Ideally, then, research adaptation is a process in which all participants not only benefit from its outcomes, but are also mutually engaged in problem identification as well as the application of research findings.

The experiences of Teacher Corps' research adaptation projects have direct implications for both policy makers and program implementers—i.e., the role and skills of project management. Many of the problems that confronted project directors were not research problems nor even adaptation problems; rather, they were management problems. When considering the social and political factors inherent in implementing special projects, one will obviously conclude that more attention must be given to managers who can interact effectively with school practitioners, educational researchers, community leaders, and a variety of educational specialists.

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# The Aura of Change

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*The word "change" designates one of the most conspicuous and pervasive features of our sensory and introspective experience—only the related feature of plurality or diversity is equally so. Change indeed is so pervasive that only after the antithetical concept of changelessness or immutability was developed in the earliest period of Greek philosophy did change become a problem for philosophical thought.*

The Encyclopedia of Philosophy
*Vol. 1 & 2*, p.75

"Through the looking glass"—people see many facets of change. It resembles fireworks; it resembles fog; it shows aging and agelessness. It has descriptors from subtle to boisterous. Coming face to face with the real thing; one encounters the awesome realities, limits, validity, and morality of change. Only solemn introspection helps one to decide the degree of personal acceptance and willingness of movement toward the new. No one really likes the new (Hoffer, 1963). Dostoyevsky (1936) declared, "taking a new step, uttering a new word is what people fear most." Can we then, be totally ready for that which is wholly new?

Many educational changes have only minimal acceptance by the individuals in organizations affected by change. Educators tend to redeem marginal success or failure by suggesting more change. Educators have too long focused on the problems in education and how to resolve them—ignoring the people who must face change. Change has taken on a mistaken identity—an identity that essentially ignores the humanity of the individual.

It should no longer be assumed that educational change will be accepted or even implemented. Change as effective action should be examined, the limits of change should be viewed with respect to the readiness of individuals to accept and manage it. A practical perspective on change should be explored prior to action on problems.

The future of successful change lies in the willingness of the change agent to abandon self-achievement and promote advancement of individual growth as well as organizational growth. Careful consideration of these and other elements must be given as we

approach, incorporate and learn to accept change. These ideas are examined in the pages which follow.

## DRASTIC CHANGE

### *Effective vs. Ineffective Action*

Change is rarely experienced without some stirring or foreboding. This is true even in simple occurrences. However with drastic change, the uneasiness is deeper and longer lasting. Some self adjustment is usually required, and self adjustment can produce crisis in the self confidence of an individual. The lack of self confidence produces a population of misfits. A passionate intensity becomes a substitute for self confidence (Hoffer, 1963).

Individuals sure of their skill, however, accomplish a great deal with ease. A population, when subjected to drastic change is hungry for action. Action is the most obvious way by which to gain confidence and prove self-worth. Drastic change, then, becomes one of the agencies through which human beings can release energy (Hoffer, 1963).

Such drastic change must meet certain conditions. Effective action will become a product of a drastic change only if there is:

a. an abundance of opportunity and
b. a tradition of self-reliance

These criteria can be related to the intervention of a temporary program or innovation. Within an organization, drastic interventions require individuals to become decision-makers. It is imperative they be sure of their skills, able to make commitments, follow through on those commitments, and seek more knowledge. All participants in the change process must hold individual enterprise in high esteem.

When individual pursuit is not held in high esteem, substitutes for self confidence become evident and reaching out for those substitutes can be fatal for the change and the innovation. Substitutes are explosive, if for no other reason than one can never have enough of them (Hoffer, 1963). Substitutes for self-esteem in education often include "merit-pay" or recognition by the administration for conformance toward organizational goals rather than balance with personal motivations. Substitutes become thirsts for rewards one doesn't even care about. These substitutes take on an altruistic nature. For some, altruism may be an adequate motivational base from which to encourage individuals within organizations to incorporate new ideas. Although altruism is a powerful motivational force, the promise of a good feeling after adoption of new ideas is

not sufficient to accomplish change. Few other groups in our society (educators) presuppose such a complete dependence upon altruism as a basis for change. Higher salaries, more release time, merit pay are all related to successful acceptance of educational change. In a society permeated with materialistic concerns, a complete dependence upon altruism ought to at least be questioned (Frymier, 1969). Hoffer, (1963), suggested that populations undergoing drastic change become receptive to all manners of proselytizing which aim at "showing the world." This may be the case with too many change innovations.

Drastic change can and often does set the stage for reform so that radical changes can be realized. The mood of change becomes one of irritation, hunger, and frustration for something different. At the same time, when things have not changed at all, there is the least likelihood of revolution. It becomes important that educators know and understand the difference (Watzlawick, et al. 1974).

Effective action in any drastic change requires: an abundance of opportunity, experience, self-concept building, balancing activity and a continued commitment to self-reliance. Self-confidence, and self-esteem must be perpetuated throughout the process of change.

Effective management and communication before or during revolution *can* generate planned change. Understanding what drastic change can do for the individual and the organization would be better than the ambiguity which often accompanies the introduction of the new.

Education is not merely a process for transmitting or reinforcing attitudes and skills, but is also a process of self-actualizing personal development (Rogers, 1961). This suggests caution when expecting groups of individuals to provide collective energy toward new goals; people act together to build for something that is concrete and purposeful. Self-fulfilling prophecy as an educational perspective is not only characteristic of cultural expectations but personal expectations. It is through self-growth that our world and future also grow (Brameld, 1973).

One rarely considers whether drastic change is of benefit to an individual, groups of individuals, or organizations. The immediate focus is usually on how change will be accomplished, followed by the goals and objectives needed to expedite the process. Change should include the following to help promote effective action:

1. Study leading toward a better understanding of the realities, limits and effective action that constitute change.
2. Development of methods to study effects of change through technology and communication.

It is a curious anomaly in the present world of innovation that while industry and commerce depend on the forces of technology and communication, educational systems receive them with unbelievable slowness and frequent hostility (Krajewski & Peltier, 1973).

Change of some sort is always imminent. Change—whether marked or mundane—should be studied before embarking on it. The art and science of communicating about change to the people involved in it, as well as the science of technology applied to change need to be thought through very carefully.

Science can reveal the depth of crisis, but only social action can resolve it. There must be a humanistic reaction to our technological challenge. Human understanding of technology and change through the art of communication is essential.

## THE LIMITS OF CHANGE

The need for fundamental changes in education seems obvious. The problems are obvious both outside and inside the educational arena. What threatens the educational environment from the outside is made worse within by the ignorance of education's many problems. Educators at all levels lack consensus on where education is going and have failed to tap the intellectual, the social, communicative, and emotional attributes of people which are energy sources through which they can make a difference in educational programs and people (Krajewski & Peltier, 1973). Why then should anyone involved in educational change be inclined to use devices or circumstances to accomplish change? Using one's personal resources to effect change seems to be limited to individuals who are capable of directing and redirecting their energy.

### *Readiness for Change*

Readiness to work toward new ends is affected by the following set of change limitations:

1. limitations on *individualism*—an absence of equity between individual and organizational needs
2. limitations on *values*—the adequacy of individual and group performance and exploration of values as measured against our basic American value structure
3. limitations on *power and influence*-- disenchantment with leadership, few expert and referent resources

The following elements of Inlow's (1972) value synthesis suggest readiness for change:

a. self-identity
b. self-acceptance
c. emergence
d. autonomy
e. social relatedness and
f. freedom from guilt

Change agents should regard flexibility and frustration tolerance as two critical elements in preparing for change. They must respond to organizational growth needs while empathetically meeting individual needs. Change agents must be able to determine the level of individual frustration, the need for help and readiness for additional alterations.

*Frustration tolerance* requires a realistic assessment of all frustrating situations; magnifying them only for the purpose of analysis and resolution (Inlow, 1972).

### *Management of Change*

The limits of change suggest that programs and organizations engaged in change processes are not completely free to operate unless individuals are able to maintain a considerable degree of independence from the managers or change agents, i.e. allow for individual's self-respect and openness. Independence of the individual from management (the project or organization) requires that change agents look for efficient methods of helping individual effort (Watzlawick, et al., 1974).

Awareness of the limits of change including provision for self-growth and for self-esteem, should increase the probability that individual members of the organizations will be ready to receive, accept, and participate in the change process.

## RESISTANCE, PERSISTENCE AND CHANGE

### *The Reality*

For further clarification on change reality and resistance to change, it would be wise to look at the internal sources of change in organizations. An organization is changed by the unique, individual people who comprise it—new people and those already within it. The organization may be changed by new highly trained people, who are not struggling for survival but have fresh and different aspirations. New people have always been catalysts for

change. A successful outcome for change lies in a course of gradualism and incrementalism, supported by the administrator who can remain enthusiastic about the effects of the innovation (Wright, 1977).

Some success with innovation sends change agents hunting for even more successes. Failure in change produces the same behavior. The differences in the kinds of success vs. failure behavior should be noted. Failure turns change agent attentions inward—stimulating re-examination of the selected goals for change. When successful, on the other hand, one is more likely to abandon the internal structure and look for new challenges beyond the system in which one works (Wright, 1977). In excess, looking for new challenges can lead to ultimate failure for any intervening system and create resistance toward innovation.

*Resistance Toward Change*

A factor related to the resistance to change is the members' lack of cosmopolitanism. Educators should encourage contact with others outside the system. The teacher, for example, should find support in expert sources beyond the immediate system. Attitudes toward cosmopolitanism are reliable indicators of willingness to change. Organizations considering change should not isolate themselves from outside sensors. Members of the organization who have contacts with special segments of the outside environment should be encouraged to draw from these sources. Multiple organizational membership encourages new and existing organizations to be strong enough to allow their members to venture into more new fields (Wright, 1977). Some relationships between the organization and society can become painful and sometimes disruptive. The internal conflict created in efforts to work out new relationships with permanent system members and temporary system members can be intense. Organizations often learn defensive tactics to help them view new pressures as only minor irritants to the organization's well being.

Change as problems to be explained can occur over and over, yet there will be no change if the system, or members within the system are resistant or not capable of change, or the organization remains invariant. Educators must recognize the obstacles that cause resistance toward change:

a. ignorance by interventionists of the available human resources in the system
b. lack of management yet no independence from it

c. system rigidity
d. multiple operations being performed on individuals
e. new system goals which have a circular nature rather than a linear one

Too many changes for the sake of change tend to leave the members within a system confused. Change happens around them in circular patterns rather than across the system's members. Too often, educators ignore input and feedback from the system's members. Limited progress toward respect of human capability seems to keep organizations resistant toward change.

Many individuals, when faced with a problem situation, resolve it by looking for the causes of a persistent problem. Therefore, one might wonder if the resistance toward change could be minimized if individuals and groups were allowed to spend time examining the cause and effect of such problems. Change agents should allow this exercise to take place without labeling groups within the organization as task or resource specific. Also important to problem resolution is the recognition of individual uniqueness and the other resources of individuals which develop from common strengths and are complementary. Providing for individual growth, and for contact with professional colleagues outside the immediate system helps to promote the individual's independence and sense of adventure.

Organizations consist of people as the force of change. People see themselves as unique and irreplaceable. Unfortunately, organizations see them as resources—trainable and useable for many tasks. Individual resistance toward change often occurs in that context.

*Persistence and Change*

The more something changes the more it remains the same. This paradox results from the relationship between persistence and change. Change and persistence need to be considered together in spite of their opposite nature. For centuries, persistence has been viewed as a "natural, spontaneous state" which needed no explanation. Change, then has been regarded as the problem (Watzlawick, et al., 1974).

Persistence and change were defined long ago by Aristotle and the Greeks. For Aristotle, change was the passage from potentiality to actuality. During the Golden Age of Pericles and the Middle Ages, change was seen as the antimony between just being and becoming. To summarize the evolution of change, some say that modern science began when people became accustomed to the idea

of changes changing, e.g., to the idea of acceleration as opposed to simple motion.

## THE PRACTICAL PERSPECTIVE

### *The Conditions of Change*

Though each of us continually changes physically and mentally, we still remain basically the same throughout life. An ever-changing continuous identity is often called growth. Growth involves a paradoxical relationship between identity and change, the organism and its environment (Jeffreys, 1971). People, as do all living things, feed on the environment, taking it into themselves physically and mentally, assimilating only what they need and rejecting what they do not need. Is growth something that people do or something that happens to them? Jeffreys suggested that growth is the response of the organism to its environment. It seems relevant then, that alternative environments be rich in purposeful innovation. Individuals should make choices relevant to personal identity. They must have ownership in ideas. Personal uniqueness is factually irreducible and must remain a goal on which values of change are set.

Not only do individuals grow but communities and organizations also grow and such growth is called history (Jeffreys, 1971). The essential trait of growth is the combination of change and continuity. The essence of history may be what is called significant change. Social beings may change their form and habits in the long process of biological evolution. A community or an organization can change only if its entity can draw upon experience, draw inference from reflection, and change behavior based on the light of those reflections. Whether anyone or anything grows successfully depends to a large extent on human relations with others (Jeffreys, 1971).

Toynbee, in his monumental *Study of History* stated that a civilization responds to the challenge of difficulty. If life is too easy or too difficult—"no new civilizations or ideas arise." One may even collapse under the pressures.

Toynbee's principle restated suggests that a community, organization, or individual—isolated and having no stimuli to respond to—stagnates, and is exploited, conquered, or annihilated. Somewhere in the middle of those extremes are those organizations, individuals, and communities which have successfully responded to the optimum amount of difficulty— survived and changed. In

addition, if the human organism remains a master of invention rather than a slave— he/she must be able to understand the challenges, the difficulties, that will be encountered.

Education can also be compared to growth. John Dewey in *Democracy and Education* said "since there is nothing to which growth is relative save more growth, there is nothing to which education is subordinate save more education...The educational process has no end beyond itself; it is its own end." For Dewey, growth and education were their own ends. Growth as an end in itself should lead to more growth, not to some preconceived final goal.

*Oversimplification*

A problem for change interventionists seems to be one of movement toward goals rather than consideration of the balance between the continuity and change in the life of a school, with individuals and with growth. Educators should look for new enterprises and ideas which will arouse interest and provide an outlet for individual energy and initiative. So often the stimuli provided members of an organization are reframed as solutions. The solution offered becomes the problem.

A practical approach to change should avoid denying problems that are real, taking unnecessary actions, intervening at the wrong level and oversimplifying problems (Watzlawick, et al., 1974).

Why do these problems occur? Educators tend to delete a very important step in the change process—that of reframing change. To reframe change means to alter the conceptual and/or emotional setting or viewpoint in relation to a situation which is experienced and place it in another frame which fits the "facts" of the same concrete situation equally well. The situation itself may remain unchanged (Watzlawick, et al., 1974). Reframing helps to change the meaning of the situation—possibly the consequences but not the concrete facts of it.

Reframing problems so that successful change can take place requires:

1. lifting a problem out of the symptom category.
2. not oversimplifying a problem, i.e., the utopia syndrome "it doesn't matter how we address the problem—the results will be successful."
3. working in a way that is congenial to an individual's way of thinking and of categorizing experience.
4. accepting what an individual has to offer—stop ignoring the individual goal in the rush toward larger goals. (Watzlawick, et al., 1974).

Collaboratively, change agents and permanent system members must clearly define problems, investigate solutions, and formulate and implement plans to resolve them. Change agents tend to intervene at the wrong level. Most often, they enter at a solution level ignoring the people elements that lead to problems.

Why do people have such difficulty in establishing humanistic priorities and values related to practical change? It is a contemporary life lack of commitment—a crisis in human relations. Educators are often confused, they do not recognize the feelings they hold and are often unwilling to take a stand on beliefs, feelings, and values. It is a crisis in human relations—inseparable from values and thus fundamental to the overall lack of commitment in our time (Etscovitz, 1973). Relation(ships) is the fundamental context of valuation and thus of a meaningful human existence. The separation of human beings from whatever constitutes our existence is a separation from the possibility of developing values and thus a meaningful life, personal as well as communal. It is a qualitative more than a quantitative loss of relation, one basic to the valuational crisis as a whole, to the loss of valuational effort and to the loss of faith in the worth of making value choices (Buber, 1970).

When educators deny problems exist, take action when not needed, presume solutions, apply multiple treatments to a milieu of nothing more than occurrences—they ignore basic value questions and assume that quantity or excess is the answer. How often have program interventionists considered the baseline values from which an organization is already functioning? How often have they applied treatment with respect to the norms and values already permeating the system and individual nature?

The practical reality of change must be characterized by meaningful, authentic, humanistic, purposeful action. Educational experiences should be designed with respect to the value dilemmas in all lives. Neutrality, ignorance and bombardment of the new in quantity is self-defeating.

## THE FUTURE OF CHANGE

It would seem that educational "progress" which includes unhampered pursuits toward short range interests by organizations and change agents for the sake of self-achievement is no longer acceptable to or defined by the individual as human progress.

One might conclude from this discussion that change as change cannot be considered without considering the moral educational

tasks which affect contemporary man—including the rehumanization of man.

Heinemann (1958) defined those tasks: "Whatever formula one may choose, dehumanization of man, annihilation of man, or the question whether man will survive in the face of the nihilistic destruction of all human values, the facts are indisputable. Once more the human world resembles the valley full of bones which Ezekiel saw in his vision and again the question is put to us: 'Son of Man, can these bones live?' The integration of the diffused and disintegrated parts into a whole, the rehumanization of man—that is the task with which we are confronted"(p. 180).

The directions for change, predetermined by adults have influenced the selection of educational products which have been brought to bear upon sometimes passive and unmotivated recipients. When resistance to influence is encountered, it is not seen as effort to choose and create the processes and goals of individual learning, but as defects of will to be overcome by controlled rewards. It is unfortunate that the thinking of the individual has been separated from living contexts, internal and external. We sometimes separate the intellect from feeling, emotion and choice.

The change that is realized in education should focus on dilemmas of human choice and action. Change agents should involve individuals in dealing operatively and contemplatively with the situations which present problems to them. Their planning should include dialogue with the many individuals who are affected by their decisions. The plans which are made should be carried into action and tested in the individual's own setting. Reflection on the processes experienced in choosing action and the effects of those actions should help to operationalize the decisions made.

The major pressures on education today are tradition, reaction, and already established interests and priorities. Such pressures create conflict between the unchanging segment of society and the segment rushing toward change. No one, it seems, has become used to continual and constant change.

Grambs (1965) states that we are all products of the same system. If one were fortunate enough to become a "curriculum coordinator," for example, it was because the individual was neither aggressive nor at war with the system and was "safely" promotable. As long as one does not engage in subversive or suspect activity as defined by the system's norms—one is "safe enough" to remain in the system.

The "enemy" may not be outside education or even outside the permanent educational system. The external forces which pressure education—tradition, values, norms, and internal system "in-

terests" often find a warm welcome inside the classrooms and offices of the "establishment." One principal, who is respected for supporting teachers who experiment with curriculum begged his faculty: "I'll give you almost anything you want in supporting educational change, if you in return will just give me support for our dress code which prescribes decent skirts and proper haircuts" (Grambs, 1965).

It is no surprise, then, that change as defined in this paper is an irrelevant factor in the processing of the coming generations of teachers, administrators, youth, and organizations.

In order for change to be relevant, a major re-ordering of our public and private value systems should be encouraged and initiated. Change interventionists have at least forced educators to shake hands with change. This mere whetting of an appetite for some change may help produce a decade of people who ask questions and show concern about the present status of education. Educators will probably have to face up to the consequences of critical questioning, challenge and modification of many basic educational concepts—growth, technology, efficiency, communication, and the legitimacy and authority of management.

Change must be slow and purposeful. Educators should not attempt to instill "new" values but rather restructure existing values. Our efforts toward change must reflect a qualitative rather than a quantitative nature.

The direction of change should lead toward more individual choice and questioning about the adequacy of the provisions made by "the system" for individual development, right, and choice.

In summary, this chapter is a plea to educators and change interventionists to balance the "new" with individual rights and institutional needs, to plan for change in organizations so human needs are truly served.

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# The Certainty of Change Theory: An Analysis of Change Ideologies

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The development and implementation of education innovation and change is inherently a political and moral process as well as a technical process. The routine and uncritical use of change theories and technologies obscures the fact change involves significant ethical decisions about human beings. Moral and intellectual consciousness raising is necessary to explicate and deal with the difficult ethical, ideological, and social problems that are embedded in change efforts particularly in a complex change project such as Teacher Corps. Such an examination is imperative in addressing the certainty of change theory or technology. All change theories have certain powerful assumptions which are more ideological than scientifically valid. It is the purpose of this paper to analyze and surface the powerful but subliminal ideologies which pervasively permeate change theories. The hypothesis of this paper is that fundamental educational change has been difficult to achieve because change theory and technology have been historically weak. Sieber (1974) succinctly summarizes the state of the art:

> *In approaching the field of knowledge utilization in education, one soon encounters a bewildering array of so called models and strategies. Here is one area of educational interest wherein conceptual schemes are as numerous as the schemes of the medieval scholastics, and in my opinion almost as useless.* (p. 61)

We make change much neater and cleaner in our theoretical description than it really is. Applying Kaplan's (1964) distinction between the manner in which a discipline creates knowledge, its *logic-in-use*, and the manner in which it presents its knowledge, its *reconstructed-logic*, we could be in either of two situations with regard to the relationship of change theory to practice: (1) change theory may be based on considered experience, but in recounting that experience, we have presented a reconstructed logic which does not reflect what actually happened; (2) we have not based our theory on considered experience so that our prescriptions are nothing more than flights of imagination.

What informs our theory and practice about change? In general, the theoretical foundations of change theory and technology emanate from the mainstream change literature of the planned (systems) and adaptive (OD) schools of thought. This section of the paper analyzes the values and ideologies inherent in planned and adaptive approaches to change identified by Berman (1979). It will explicate tacit assumptions, identify critical issues relating to change, and suggest different starting places for launching change. A basic assumption of this analysis is that while systems and organizational development theories may contribute to the achievement of some educational change, there are certain fundamental and significant problems in the theories that inhibit change. An understanding and recognition of these problems suggests there are alternative assumptions and ideologies about change which have been closed out as theoretical options by the uncritical embrace of contemporary change theories and technologies.

## THE MYTHOLOGY OF NEUTRALITY

Change technologies and theories are not interest and value free. In discussing the values evident in, and perpetuated through such supposedly scientific procedures as systems management, Apple notes how systems language performs a political function by convincing others of the sophisticated state of the field of education and by evoking tacit meanings from the general audience that are basically supportive of a quasi-scientific belief system. Order and consensus are extremely important for the proper functioning of systematic approaches; conflict and disorder are antithetical to a smoothly functioning system (Apple 1972):

> *It should be clear, then, that systems approaches are not essentially neutral, nor are they only performing a 'scientific' function. By tending to cause its users and the other publics involved to ignore certain possible fundamental problems with schools as institutions, systems management also acts to generate and channel political sentiments supportive of the existing modes of access to knowledge and power.* (p. 15)

Systems approaches rest on a set of hidden beliefs which, when examined, are often unrealistic and socially and politically conservative. These assumptions are concerned with the tacit advocacy of a view negating the importance of intellectual conflict, a limited perspective on scientific endeavor, an inability to deal with ambiguity, and finally, a separation of moral and technical questions (Apple, 1972).

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Others, like Passmore (1973), have addressed the problem of terminological bias, saying that scientific sounding words like "efficiency" often disguise value judgments, and that seemingly factual statements often imply value judgments or even formulation of social policy. House (1973) identifies some underlying values of systems approaches:

*componentiality*: reality can be easily separated into neat components
*multirelationality*: an individual can be fragmented into all the relationships he/she must maintain in society
*makeability*: problems can always be solved, and
*progressivity*: it is desirable to maximize the benefits of any action

Apple (1972) suggests that systems procedures actually enable avoiding conflicts over basic values by making choices within the limited framework of existing modes of interaction and by precluding questions about the basis of the structure itself. Using scientific terminology this way serves to deemphasize value conflicts and to portray decisions as factual or reality-based judgments. Technological language not only narcoticizes our senses to the moral and value issues in change but also creates a "reality" about the change process which really doesn't exist.

The technology and language of systematic change approaches shape the minds of those who use them and obscure the fundamental aim of systems procedures, i.e., effecting and maintaining technical control and certainty. Systematic approaches are used presumably because they offer a technology for resolving potentially conflicting norms, values, and behavioral regularities of people and institutions. They are regarded as functional approaches to change because in theory they supplant the inefficient with the efficient, the unpredictable and the unique with the predictable and patterned, subjective quirks and biases with impersonal, rational, and objective procedures, and slow and tedious hit-or-miss methods with smooth and precoded routines. However, the systems procedures that are effective for developing a rocket are not necessarily effective for helping people to achieve meaning in life and for dealing with the competing political, moral, and intensely personal conceptions of valuable educational activity. Uncertainty, ambiguity, and conflict are the very fabric of life, the very nature of being human. Eliminating them is a contradiction. The philosophy of gradualism, a principal ideological underpinning of systems and OD approaches, has influenced our belief systems so that we rationalize and schematize

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order, control, predictability, consensus and planned change and eliminate the human dimensions and reality of uncertainty, serendipity, ambiguity, unpredictability, and conflict —elements which accompany the political, ethical, and moral issues found in any complex educational innovation and change.

## THE IDEOLOGY OF GRADUALISM

Smith (1973) identifies the two great paradigms of change in Western thought as endogenous and exogenous. The dominant tradition in Western thought has been the endogenous paradigm of change. According to this perspective, change is like the growth of a plant or animal: slow, continuous, upward spiraling, inexorable and irreversible, uniform, and above all, immanent and natural. Change is viewed as dual: internally self-generated and cumulative, and externally imposed and intermittent. Both feed each other in a neo-evolutionist schema. The endogenous paradigm sees crisis or "major intrusions" as infrequent, intermittent, and a punctuation of the relatively smooth cumulative growth of the homeostatic equilibrium.

The exogenous paradigm of change sees crisis as a frequent and normal part of the change process. Change is analyzed in terms of the intrusion of major events, the influence of the environment, and crises. Crisis is the ubiquitous symbol of change. Symptoms of disturbance, upheaval, social movements, and the overthrow of institutions are subsumed under the term "crisis." Change is rarely smooth or regular but is usually fraught with tension and conflict.

The dominance of the endogenous paradigm of change is reflected in the ideology of gradualism which permeates educational theory and practice. The intellectual roots and tacit values of systematic, planned, and OD approaches support the gradualistic evolutionary cooperative approach to change that characterizes contemporary educational innovation. Recently the scientific validity of gradualism has come under question leading to significant implications for educators interested in educational change and reform. Gradualism is a philosophy of change, not an induction from nature. Stephen Jay Gould (1978) in his essay "Evolution: Explosion, Not Ascent," notes that when Darwin adopted gradualism as his firm view of evolutionary change, he argued more from tradition than from observation. Darwin was influenced by two people: J.B. Sumner, the Archbishop of Canterbury, who held that discontinuous change is a criterion of supernatural intervention since all natural change must be gradual; and Charles Lyell who, in his

reformulation of geology, postulated a stately world of slow, steady and gradual change without direction. Backed by the prestige of Darwin and Lyell, gradualism triumphed in the 19th century and prevailed until recently among natural and social scientists almost as an exclusive orthodoxy. Gould argues that gradualism is now beginning to disintegrate in field after field and that the evidence of geology indicates that punctuational change, i.e., sudden, abrupt replacement and rapid flips mark the history of most species. Many other disciplines are now considering alternative models of punctuational change and economists, ecologists, physicists and anthropologists are constructing mathematical models and theories of catastrophic transformation to challenge the conventional wisdom of gradualistic evolution.

Why did gradualism become so popular and exert its hegemony for so long? Gould suggests that the answer must lie partially in nature, for some change is slow and continuous but the utility of gradualism as an ideology must explain much of its influence, for it became liberalism's quintessential dogma against radical change—sudden flips are against the laws of nature. Gould asserts that gradualism's strong ideological components have been more responsible for its previous success than any objective matching with nature:

> *As gradualism unravels in many areas, it becomes important to understand what supported it in the first place. Scientists tend to assume that such prevailing assumptions arise inductively from patterns in data, obviously perceived. But nature is maddeningly multifarious, it speaks ambiguously on any issue so cosmic as the nature of change. Shared assumptions often reflect a cultural and political climate more than they record the constraints of scientific data. Gradualism has complex roots, but its role as a general ideology must not be underrated; it became the standard argument among 19th century liberals trying to preserve the social order against increasing threats (and practices) of revolution.*

The ideological role of gradualism in change is illustrated in the story of Charles Stewart Fox who battled the Prime Minister of England, William Pitt, and the majority of the English Parliament to end the slave trade. Told that the slave trade could not be cut off abruptly, "these things take time," and any changes would have to be long term and gradual. Fox replied, "That one word *gradual* each year condemns many thousands of people to die."

In summary, the gradualistic evolutionary model of change has served and currently serves vested interests and maintains the sta-

tus quo as a subliminal ideology pervading contemporary educational innovation and reform. As a philosophy of change, it has nourished the consensus model of thought profoundly affecting American educational tradition and change theory.

## THE CONSENSUS MODEL OF THOUGHT

The consensus model of thought is mirrored in both organizational development and systems management. Jackson Kytle (1977) in his critique of the technological ethos of the "change industry" elaborates Israel's (1972) two competing conceptual models of change: the conflict model and the consensus model. The point of divergence for the models is inequality. The conflict model treats inequality as the central contradiction causing competition between the classes. The consensus model, in contrast, focuses primarily upon mechanisms allowing structural inequalities to be negotiated, the most important one being commitment to shared moral or political goals. In the conflict model disequilibrium is seen as necessary and desirable, whereas the consensus model assumes that balance and stability are the norm.

Kytle (1977) argues that organizational development is predicated on a consensus paradigm. Organizational development theory assumes that conflict is endemic within organizations and the uncontrolled conflict within an organization impedes organizational health. The goal of organizational development is to reduce internal conflict by increasing individual "ownership" (psychological ownership, not material ownership) of organizational goals and processes using the techniques of survey feedback and conflict management. Kytle concludes that organizational development is ideologically loaded in favor of management and institutional/organizational interests; that it tends to support traditional organizational/institutional values while muting dissent along the way; and that most of the long range changes produced by organizational development programs are cosmetic with the basic economic and political structures of the organization remaining untouched. Kytle's conclusion is supported by Karl Weich (1969) who notes "organizational theory has often been stifled because it has worked on problems that managers thought were problems and has studied them using managerial concepts rather than psychological or sociological ones."

The intellectual history and tradition of organizational development theory would seem to support Kytle. Braverman (1974) observes that organizational development and human relations have been touted as a replacement for Taylorism (Frederick Taylor is

regarded as the father of scientific management) but that Taylor introduced his ideas on the segmentation of labor with the same progressive and humanistic language. The avoidance of conflict and the promotion of equilibrium or a state of collaboration constitute the main programmatic orientation of Elton Mayo and Roethlisberger whose research (the Hawthorne Studies) and work in establishing personnel departments and the human relations movement in industry form one of the major theoretical bases of organizational development. According to Coser, their trained incapacity to understand conflicts of interest is evident in all their writings. Coser (1964) also observes that Kurt Lewin developed a strangely contradictory attitude toward conflict. Initially, he stood for a militant position emphasizing the need to engage resolutely in conflict activity to maintain and insure the existence of the group, but then he moved to the position of avoiding conflicts through social management and group skills.

In his critique of the consensus/conflict dichotomy, Kytle (1977) recommends that social psychology attend to the history of its contributions to applied areas and commands the attention of those who wish to understand the consensus psychology of organizational development:

> *The theory and practice of organizational development, not to mention other group based technologies, is heavily dependent upon major elements of mainstream social psychology such as field theory, theories of cooperation and competition, interpersonal attraction, bargaining, attribution theory and group dynamics. It is also noteworthy, in this connection, that community organization programs do not draw very much upon mainstream social psychology because the liberal cooperative orientation of the latter is usually irrelevant to the situations of conflict and confrontation encountered in community organizing work. In general, social psychology has not been sufficiently concerned with its application to concrete social situations and seems virtually unaware of how its implicit values of consensus, cooperation, conflict resolution and the like have been ideologically loaded in favor of the dominant entrepreneurial and professional elites in our society.*(p. 705)

The consensus model of thought not only undergirds organizational development theory but also systems approaches. The way order and conflict are mirrored in systems approaches used in education indicates a rule of activity that causes most of us to view order as positive and conflict as negative (Apple 1972):

> *Order becomes a psychological necessity. This is rather important. As I mentioned before, systems approaches attempt to bring about a technical solution to political and value problems. There is nothing odd about this occurrence. Most advanced industrial societies seem to transform their ethical, political, and aesthetic questions, for instance, into engineering problems. Profound conflict between opposing ideological and moral positions are translated into puzzles to be solved by technical expertise. Now, when questioned about the tendency to eliminate conflict, or redefine it, and search for consensus, proponents of systems management in education could and do, in fact, take the position that they are merely trying to be scientific about their problems....The perspective they have of science is notably inaccurate....The history of science and the growth of individual disciplines, has* not *proceeded by consensus. In fact, most important progress in these fields has been occasioned by intense conflict, both intellectual and interpersonal, and by conceptual revolution.* (p. 17)

The consensus model of thought found in organizational development and systematic change theories is deeply embedded in the entire cultural web of education. American educators have been imbued with the cultural illusion that all progress in education evolves inevitably and properly from a consensual integration of confluent tending social circumstances and values ordering the universe as a whole, the social system , and particularly formal education. Reitman (1974) suggests that most educators have historically been "collaborationists" in their thinking, and this kind of thinking reinforced by the collective wisdom of HEW and NIE persists into the modern age where it is increasingly likely to fail to help achieve desired and desirable societal and institutional reintegration and equilibrium.

The consensus model of thought still taken for granted by most educators assumes that the social system is a holistic enterprise with all cultural and demographic elements ideally fitting together in a well-integrated fashion. Vested interests that have legitimated their power control the enterprise and inevitably resist efforts to bring about changes in the core normative structure of that enterprise (Reitman, 1974). If change is unavoidable, it emerges gradually from perceived disjunctions in the structure of a system or from accretion, in the form of modest additions to the status quo—never major replacements—and is grudgingly harmonized with existing cultural patterns. *Cooperation* and *collaboration* among all well enculturated members, including "loyal" innovators are the keynotes of change, as are *rational dialogue* and *progressive* modification of system patterns. Change tends to be viewed from a perspective of moderation,

rationality, collaboration, avoidance of rebelliousness by proponents of reform, and preservation of whatever existing patterns are possible. Reitman (1974) believes that this change ethos is dysfunctional and that the pervasiveness of the consensus model of thought is the fundamental reason that many once-promising educational innovations and reforms have failed to materialize:

> *The failure of practically every important educational reform proposal made in the past 75 years...can, in the final analysis, be traced to the inability of large numbers of actual or potential reform-minded educators and their allies to appreciate the necessity and the legitimacy of truly original thought and, attendantly, individual and collective dissent at times on behalf of needed changes in the structure and function of the institution. This type of thought and behavior is required whenever a highly significant proposal for change is made, since such proposals are almost invariably strongly resisted by powerful individuals and groups possessing vested interests in preserving the status quo at practically any cost.* (p. 342)

The embodiment of the consensus model of thought in change theory guarantees that our approaches to change do what they really are supposed to do—effectuate small increments of change, maintain the status quo, and minimize conflict. According to Mann (1976) many people deny the possibility of any change in education except through the cooperative route, and "that attitude seems to be as much a description of the problem as a valid conclusion. The purpose of public policy remains the regular achievement of public goods—under many circumstances but especially in instances of conflict or disagreement which are after all the most significant environment for public policy." The danger in practicing contemporary change theory is that its language dulls our sensitivities to the positive and integrative functions of conflict as an engine of educational change.

## THE ETHICAL USE OF CONFLICT

Values and assumptions about human activity in society are important for all levels of educational change theory and practice even though their immediate meaning may not be obvious. A theory of educational change by definition must presuppose at some point in time a theory of alienation, dislocation, and conflict. To focus on the functional aspects of conflict is not to deny that certain functions of conflict are destructive or that they lead to disintegration of organi-

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zations and social structures. Such focusing, however, serves to correct a balance of analysis which has been tilted in the other direction. In a series of basic propositions distilled primarily from the theories of Georg Simmel (1955), Lewis Coser (1964) has clarified the integrative functions of conflict. His seminal and powerful work has significant implications for management theory and practice and for educational change which can only be summarized here. In clarifying the concept of social conflict, Coser (1964) identifies several positive values of conflict:

> *Conflict within a group may help to establish unity or to reestablish unity and cohesion where it has been threatened by hostile and antagonistic feelings among members. Whether internal conflict promises to be a means of equilibration or social relations or readjustment of rival claims, or whether it threatens to tear apart depends on the organization's or social structure's tolerance of conflict.*
>
> *Conflict usually takes place within a common universe of norms and rules and leads to the establishment and extension of such norms and rules. In the course of conflict new rules are continuously created and old rules modified. By bringing about new situations, which are partly or totally undefined by rules and norms, conflict acts as a stimulus for the establishment of new rules and norms.*
>
> *Conflict brings into the conscious awareness of the contenders and of the community at large norms and rules that were dormant before the particular conflict. By reaffirming dormant norms conflict intensifies participation in social life and decision-making.*
>
> *Conflict makes possible a reassessment of relative power and thus serves as a balancing mechanism which helps to maintain and consolidate social structures and organizations.*
>
> *Conflict creates associations and coalitions by bringing together otherwise unrelated persons and groups. Coalitions and temporary associations can produce agreement and change out of relationships of competition and further stimulate social participation.*

How can these propositions inform our vision and practice? What can be extrapolated from Coser's work which will advance the accomplishment of educational change? Are there ethical ways in which conflict and crises can be induced to generate change? Should all conflicts be mediated and managed or is there some value in

exacerbating conflict to produce educational change? Kytle's observation that community organizers do not draw very much from the cooperative and consensus psychology of change theories to promote social change is insightful and suggests that Saul Alinsky's (1971) community organization approach which uses a change strategy based on deliberately induced conflict may offer some provocative ideas for theorists to mull over in considering the challenges of educational change.

Conflict is ubiquitous in human life in the sense that flight is ubiquitous in the existence of most birds. It is simply a mode of action, a method of achieving goals in the social context. Its elimination would require the condition that no human beings would ever desire the achievement of incompatible goals, and this in turn would require either the social isolation of all human beings or the psychological transformation of all persons but one into willless zombies (Bailey & Feder, 1973). The pursuit of change in American schools must take place in the context of a pluralistic society. A plural democracy ultimately grounds its values in the differences among individual members. The clash of values which is so clearly present in site resistance to change is the clash of legitimately differing interests. Many of our most interesting public situations involve such rights-in-conflict. They are intriguing and demanding exactly because they are the context of leadership (Mann, 1977).

Implicitly, the conflict model of change is as ideological as the consensus model, but it uses different assumptions and values. This suggests that a significant part of change theory and technology as a field ought to be committed to the responsibility of becoming a critical science. Such a responsibility is rooted in seeking out and illuminating the ideological and epistemological presuppositions of change theory and technology to make educational innovators ideologically and intellectually aware in dealing with the complexities and subtleties of initiating educational change and in developing alternative hypotheses about change. Omissions of these alternative views from change theory are more suggestive than what theory includes and more may be learned from what change theory does not say than from what it says.

Unconsciously and unintentionally eliminating alternative hypotheses and theoretical options is the byproduct of implementing change theories and technologies without critically examining their hidden assumptions. Examples of other ideological myths which have limited the development of alternative change strategies and perspectives are found in the ideologies of participation/ownership, perfectability and goodness, and "change is virtue."

## THE IDEOLOGY OF OWNERSHIP AND PARTICIPATION

An article of faith in organizational change literature is when people participate in decision-making and develop a sense of ownership the prospects of implementing change are greatly enhanced. Corwin (1979) says that the principle of ownership is a romantic myth to which almost everyone subscribes. The idea is attractive because it seems democratic that people will not accept an innovation unless they have participated in decisions regarding it. But this hypothesis is far from conclusive. Dachler and Wilpert (1978) conclude the literature and research on the principle of participation/ownership is fragmented and that the concept of ownership is not well substantiated by empirical evidence. In their review of the literature they offer critical obervations about the idea of participation/ownership.

- Participation in decision-making may require a number of unique responses and interaction capabilities, certain personality attributes, possession of various resources—considerations which have not been treated to any extent in the research.
- Motivational, perceptual, and emotional processes of individuals may set boundaries for participation potential and the outcomes of participation.
- Participatory systems which consider the value of employees but deemphasize their factual knowledge and expertise may contribute to greater imbalances in the decision-making process in favor of those who already hold power by virtue of their knowledge and expertise.
- Two crucial and still ill-defined concepts underlying the principle of partnership/ownership—power and influence—are largely ignored in the literature.
- Participatory and ownership processes may contribute to group think phenomena (Janis, 1972) and subtly stifle individual dissent and creativity.
- An organization wanting to develop a participatory system in a society in which most other institutions are based on autocratic principles may find that its members do not have the disposition and necessary capabilities for participatory decision-making and ownership.
- Research has neglected to question whether individual, group, and organizational conditions that might be necessary for partici-

pation to achieve intended values and goals are viable within existing social conditions.

- Research has not informed theory or practice well about the application of the principle of participation/ownership in decision-making and change in terms of such elements as the size of the organization, the content of the decision, the amount of information required, the complexity of the decision, and time constraints in decision-making.

While Dachler and Wilpert's review of the literature focuses on the scientific and technical aspects of the principle of participation/ownership, Corwin (1979) addresses the moral dimension when he asserts that participation "is often a mere guise for selling an idea and coopting people" (p.23). Ownership is used to seduce people psychologically to buy into a change which never emanated from them in the first place. A change is planned, introduced into an organization, and the concept of "ownership" is employed to influence people to think the idea for change was theirs to begin with. On the other hand, Corwin (1979) suggests participation and ownership may limit the possibilities of change anyway because "the more people who are included in the decision process, the more the original idea will be negotiated away in order to get it accepted by people with conflicting ideas about what it should be and do and whom it should serve" (p. 23).

Democratic decision-making and ownership of change is an attractive principle but it is not the only principle of authority which governs organizations and influences change. The ideology of ownership more often expresses what we wish were true and its primacy and preeminence among major concepts in change theory and technology deflects attention away from the possibility that power and political processes are legitimate, appropriate, and effective tools for bringing about change. Mann (1979) says, "I would submit to you that there are situations in which people can be forced legitimately to comply....Where there is no other recourse and where it can be legitimated leaders must sometimes exercise power in the pure sense of forcing compliance and punishing non-compliance" (p. 4).

The ideology of participation/ownership has created in change theory and practice an attitudinal and intellectual aversion to the use of legitimate authority, power, and political processes. Perhaps somewhere in the dim past power, authority, and political processes as techniques for leadership and change may have been overrated but it seems now their appropriate use in effecting change is vastly underrated. Paul (1977) states the case well:

> *Change in education has frequently been brought about through power/coercive strategies. School integration is one notable example; others include legal decisions involving teachers' unions, students' rights, and due process. The community control movement of the late sixties (Ocean Hill-Brownsville) and recent citizen reluctance, and in some cases, refusal to pass school budgets are additional examples. One reason for the lack of attention given the power-coercive strategy may be the rational academic bias of model developers on one hand, and on the other, the persistent belief that educational decisions are not political. Regardless of the reasons for ignoring power-coercive strategies, the fact remains that such strategies are among the most effective and powerful in education today.* (p. 34)

In one of the rare detailed treatments of power-coercive strategies Zaltman and Duncan (1977) offer the following guidelines for using power to effect change:

1. When commitment by the client system is low power strategies may be desirable.
2. The lower the perceived or felt need for change among a client system, the greater the need for a power oriented strategy.
3. Power strategies are desirable when a protracted adoption-decision making process is likely but change must be immediate.
4. Power strategies can be effective when various individuals or groups may be favorably disposed to change but one person or group is acting as a bottleneck or barrier.
5. Power strategies can be effective in creating change rapidly before resistance can be mobilized.
6. The less susceptible to modification a change is, the greater the need for a power strategy to force change within the client system. Power strategies may also be useful in securing a trial use of change.

The exercise of power has a potential retaliatory cost to its user. There is a risk to using legitimate power. Perhaps it is the risk involved which has intimidated change agents, reinforced and accentuated the ideology of participation/ownership, and removed from serious consideration a proven and powerful strategy for creating educational change.

## THE IDEOLOGY OF PERFECTABILITY AND GOODNESS

Change theory and practice have been deeply influenced by existential-humanistic theories of human behavior which have fo-

cused on personality growth, the development of individual potential and efficiency and mental health in the context of organizations (Argyris, 1964, 1971; McGregor, 1960, 1966). These theories: (1) assume a basic hierarchy of needs which culminates in a need for self-actualizing behavior, and (2) argue that organizations can create the conditions whereby their members will become less defensive, more productive, more receptive to change, more self actualizing, and that consequently organizations in turn will become more healthy and productive and incorporate change whenever it is needed. This self-actualizing optimistic view of human nature, particularly as it is delineated in the work of Maslow (1954) and Rogers (1951), has affected organizational theory, leadership theory and practice, and change theory and technology so profoundly that the existence and the power of individual and organizational pathology in negatively influencing, blocking, or resisting change has all but been eliminated from serious and studied thinking about change.

Oja (1980) hypothesizes that there is a relationship between an adult's ego development stage and his or her receptivity to and incorporation of change introduced through inservice education. Adults at the lowest level of ego development—the Self-Protective Stage—would be the least receptive to change vs. adults at the highest levels of ego development—the Autonomous and the Integrated Stages—who would be most receptive and open to change. Jane Loevinger (1980) in writing about therapeutic change says that a "thoroughly manipulative, opportunistic client at the Self-Protective stage may be about as resistant to change as anyone a therapist will encounter." The research and literature on the effect of intensive individual and group therapy in changing people is extensive and far from conclusive. It suggests that changing individual behavior and attitudes is a formidable, complex, and long-term task. Extrapolating from that literature one might speculate about the effects within an organization of six or seven adults at the Self-Protective stage in their development banding together to reinforce each other, to gain advantage, to serve their vested interests, and to block change. Centers or clusters of pathology exist in every organization. There are groups of people who are defensive, opportunistic, manipulative, and preoccupied with gaining personal advantage. Moreover, contrary to the prevalent existential humanistic view, poor mental health may be more infectious than good mental health.

Change theory has not dealt very adequately with the concept of "centers of pathology" because it has been wedded to a view of organizational and individual behavior which has minimized the

power of self-protective pathology not only in effectively blocking change but also in creating regressive change. How does one deal with centers of pathology? How are clusters of self-protective people changed? To what extent are therapeutic and educational interventions required to move people from the self-protective stage to higher levels of ego development so that they will be more receptive to educational change? Is it worth the time and effort to try and change the intractable or should educational innovators work around these centers of pathology to effect change? Can change be accomplished through bypassing clusters of pathology? To what extent should legitimated power and authority be used to force change within centers of pathology? What kind of damage can be wrought on a change effort by centers of pathology? If it is difficult to change individual behavior under the best of therapeutic conditions what unique interventions are required to change groups of self-protective, opportunistic people so they eventually will be ready for educational change?

A reconsideration of the power of self-protective pathology in organizations may help to correct an imbalance in our assumptions about change. Hopefully, the emotional and ideological commitment to the perfectability of human nature will not preclude some thinking about the darker sides of human behavior and their impact on change. In their works Edgar Allen Poe, Hermann Melville, Joseph Conrad, T.S. Elliot, Alfred Hitchcock (and more recently Stanley Kubrick in his film *The Shining*) remind us of the way disorder intrudes upon the blithe assumptions of ordinary people that the world is a logical place, of the omnipresence of malevolence in the most commonplace situations, of the intrusion of the anarchial on great symbols of order, and of the demons that pursue every feeling man and woman. Fully and openly confronting the imperfections and darkness of human existence may in the long run be the most humanistically helpful way of refining and improving change theory and technology.

## THE IDEOLOGY OF VIRTUE

Change is more virtuous than stability. Change is its own reward. Change is never immoral, unvirtuous, or bad. These are subliminal and attractive elements of the change ethos which subtly affect change agents. Initiating and implementing change are viewed as heroic. "The underdog is portrayed as a purveyor of change. Truly effective innovations are presumed to be introduced into an institution by subordinates or subordinate units without strong support

from the top. We all root for the little guy who overthrows the yoke of big bureaucracy...another myth is that certain heroic individuals can, in single handed fashion, force through a change on a reluctant institution" (Corwin, 1979, p. 24).

Built into the change process is an unquestioned intrinsic sense of morality which makes the business of changing people and organizations very seductive. Euphoric expectations; unconscious patronizing attitudes; visions of heroic rescue of organizations and people; and the image of the underdog pure of heart and armed with conceptual schemes, matrices, theories, and technical skills cleverly strategizing change—these are the occupational diseases of change agentry emanating from the hidden ideology "change is virtue." Change is tedious hard work and requires a heroic commitment—but a heroic commitment to see things through and be persistent. Persistence may be grossly underestimated as a necessary condition for effecting change. It is not a razzle-dazzle way of changing things but in the long run, along with power-coercive strategies, it may be as potent as anything else known about creating change (Mann, 1979). The dangers in succumbing to the occupational diseases of change agentry are: (1) change agents—"the changers"—are often seen by "the changees" as academic buccaneers, entrepreneurs, who are not prepared to lay out on the table their vested and selfish interests in promoting change, and (2) intellectual humility is lost. Intellectual humility is required in the change process to put change into proper perspective. "Changing an organization is at best a complex and exceedingly difficult undertaking. If a few good things really happen, if a new program can improve things by a few percentage points maybe that is enough" (Corwin, 1979, p. 27).

Change agents are often passionate believers and all change agents—institutional or individual—are advocates of some position conscious or unconscious. Change agents are not value-free nor are they devoid of personal and selfish interests. The goals of a change agent and the client system for change may not coincide. Under the ideological mantle that change is good the change agent may work an agenda which could lead to certain second order or unintended consequences such as manipulation of individuals and events to serve the invisible values and goals of the change agent. This issue suggests that change theory may be well illuminated by the study of the change agent as theory.

The central question of change is how vested and selfish personal and organizational interests among universities, schools, and communities can be wedded together so that everyone gets something and in the process learning and growth are improved for children.

Marrying vested interests, indeed, admitting institutions and individuals have vested interests that are served by change projects, demands the intellectual humility "to puncture our balloons and bring them back down to earth," to recognize change is a human process, to temper the ideology of virtue implicit in change, and to admit that conventional change theory and practice have barely scratched the surface in generating fundamental educational change.

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# Change Models As A Framework for Project Evaluation

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Improvements in education occur through changes in educational systems and personnel. Louis, Rosenblum, and Spencer (1978) recommended that "the issues of dissemination, utilization, and achievement of educational outcomes can be more productively examined; and recent efforts more meaningfully discussed and compared, by using an educational change conceptual framework" as one basis for analysis. The change framework they referred to has evolved from theoretically based models used mainly in the social sciences, business, industry and military establishments.

The models which were adapted by researchers for post hoc analysis of federally-funded education during the last decade were reviewed for their appropriateness to educational settings (Berman & McLaughlin, 1974, 1975, 1977; Carey & Marsh, 1980; Emrick, 1977; Havelock & Lingwood, 1973). They concluded that even though goals and objectives were reasonable, many projects fail to accomplish them due to phenomena which can easily be identified within models of planned change in educational settings. Post hoc studies have provided explanations for the failure of many projects to change educational practices in local settings either during or beyond the tenure of the project.

Several areas in which federally-funded projects for educational reform are incompatible with current change theory have been identified (Berman, 1980; Carey & Marsh, 1978, 1980; McLaughlin, 1978; Mann, 1978). For example, many inconsistencies occur between recommended activities and actual practice during the *initiation* phase of a project. During this initiation phase, one commonly-accepted model would recommend that individuals within the organization recognize the existence of problems and a need for change in the current practices. They must agree to solutions proposed to change the organization and further agree to cooperate in activities designed to bring about the desired changes. The organization's desire for proposed changes must be strong enough to provide the resources necessary to bring about the changes and to maintain the program in its reformed state. In many federally-

funded projects, none of these prerequisites to a smooth change process exist. Proposals are written by individuals outside the organizations, objectives and priorities are identified to meet federal guidelines for funding, and needs within organizations are tailored or moulded to suit predetermined goals and objectives. Additionally, financial resources are supplied by the Federal government, and experts to provide the needed linkage tend to emerge and be hired (indirectly) by the Federal government through the proposal process. Hence, many schools which were to be changed could be viewed as innocent bystanders during the initiation phase.

Given these initial inconsistencies between recommended procedures in change models and actual practices to get projects underway, efforts to change schools through government and university intervention have a shaky beginning. Moreover, when one analyzes recommendations compared to actual practices, it appears that inconsistencies exist throughout all the phases of the change process. Table 4 lists a few.

Considering the lack of impact of educational reform projects, project personnel might wonder how to provide a project with a better chance for success. Several recommendations readily come to mind.

1. Project personnel should become familiar with change models and pertinent literature. This information should be used to develop a local model and plan strategies for project implementation during each phase of the change process.

2. The model should be used to develop an evaluation framework for the project which includes data gathering instruments and indicators of progress related to change during each phase of the project.

3. They should document their successes and failures related to the change model they use and either adapt their model or their strategies as needed to improve their chance for success during the project. This information would facilitate analyses of change and impact in educational reform programs.

During a study of the change process used in local projects conducted in 1978 with Teacher Corps project directors, program specialists and documentors in the Research Adaptation Cluster, it became apparent that many were not familiar with terminology and models commonly associated with the change process (Carey & Marsh, 1978). Familiarity with change models and terminology is

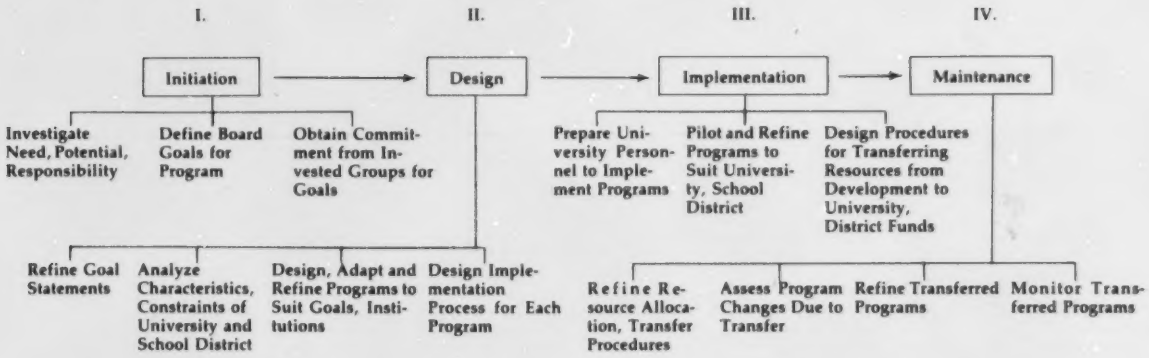
Table 4

INCONSISTENCIES BETWEEN ACTIVITIES
RECOMMENDED IN CHANGE MODELS
AND ACTIVITIES IN EDUCATIONAL REFORM PROJECTS

| Project Phase | Recommended | Actual |
|---|---|---|
| Initiation and Problem Identification | 1. Group to be changed recognizes and defines problem<br>2. Group to be changed selects change agent(s)<br>3. Group to be changed provides resources/commitment<br>4. Group to be changed establishes goals and priorities<br>5. All individuals affected participate in planning/consensus | 1. External group identified problem<br>2. External group hires change agent(s)<br>3. External group provides resources<br>4. External group establishes goals/priorities<br>5. Few individuals affected participate in planning. Leadership often unaware, uncaring. |
| Solution Identification and Group Consensus | 1. Search all possible options for solution/program<br>2. People affected should search for/agree upon solution<br>3. Target groups should select themselves as focus to change<br>4. Personnel within and across institutions should cooperate | 1. Solutions selected were based upon planning/experience of small group of project initiators<br>2. People affected were not consulted<br>3. Target groups for change did not select themselves<br>4. Personnel independent within institutions; no mandate to cooperate |
| Program Acquisition and Adaptation | 1. Programs selected should be proven successful<br>2. Persons adapting programs should be experts<br>3. Planning for program delivery (resources, technology) should be complete<br>4. Individuals using program should be involved in adaptation | 1. Theory/technology often uncertain<br>2. Persons adapting programs not skilled in program selected<br>3. Program delivery not well planned and technology not adequate<br>4. Persons using program were often not involved in adaptation |
| Program Implementation and Adaptation | 1. Program maintains some fidelity to the original plan<br>2. Technical assistance readily available<br>3. Sufficient number of staff participating<br>4. Support by leaders/administrators active/observable | 1. Programs often adapted until totally different<br>2. Technical assistance not adequate<br>3. Group often made up of small number of volunteers<br>4. Support by administrators absent |
| Program Maintenance and Renewal | 1. Resources for maintenance available through organizations<br>2. Program implemented maintains fidelity to program planned<br>3. Personnel involved able to plan/renew own program | 1. Resources for maintenance unavailable<br>2. Program adapted drastically until not recognizable<br>3. Personnel unable to generalize process to new problem |

Figure 2

A Change Model Proposed to Guide Universities in Developing Programs for Inservice Education


I.
II.
III.
IV.
Initiation
Design
Implementation
Maintenance
Investigate Need, Potential, Responsibility
Define Board Goals for Program
Obtain Commitment from Invested Groups for Goals
Prepare University Personnel to Implement Programs
Pilot and Refine Programs to Suit University, School District
Design Procedures for Transferring Resources from Development to University, District Funds
Refine Goal Statements
Analyze Characteristics, Constraints of University and School District
Design, Adapt and Refine Programs to Suit Goals, Institutions
Design Implementation Process for Each Program
Refine Resource Allocation, Transfer Procedures
Assess Program Changes Due to Transfer
Refine Transferred Programs
Monitor Transferred Programs

Reprinted from *University Roles in Inservice Education: Planning for Change.* Washington, D.C.: AACTE, 1980.

beneficial in effectively managing a project that requires change and innovation. Since 1978 more Teacher Corps directors have acquired knowledge and skills related to the change process and have used it as a framework to reflect upon their activities. This should help present project management and documentation activities.

If directors were to use their knowledge of the change process to develop or adapt local models for change and use their models as a guide for project activity, they could then test these models based on real experiences. Reflection about project phenomena would be more fruitful if it were done by those involved in the project at the time it occurred. Although current post hoc analyses and reflection based upon change models by Teacher Corps Research Adaptation Cluster project directors and outside teams of researchers are valuable, knowledge gaps continue to exist because project strategies were not initially based upon a change framework. If change models were used during a project, more complete information could be collected for comparison across projects, and better models could be developed to engineer educational reform under circumstances that appear to defy current change models.

How can change models be used to develop an evaluation framework for a local project? For the purpose of illustration, the change model proposed by Carey and Marsh (1980) to guide university involvement in inservice education will be used. Figure 2 contains the four-phase model which includes initiation, design, implementation and maintenance. Dividing the project into major phases of activity will facilitate developing appropriate strategies to support the desired change. It will also become easier to develop instruments or identify indicators of progress within each of the four phases. When the project is not divided into phases for planning and evaluation, evaluation activities tend to be based upon final goals and outcomes, and information concerning the change process is too often overlooked.

Initiation activites based upon the change model are described in more detail in Table 5. Since the model prescribes that leaders and members of the groups affected by change projects be involved in identifying their own problems and planning solutions to address their problems, then it is important to seek group involvement, commitment and consensus prior to describing the exact nature of the project.

Early evaluation activity and documentation during the initiation phase can help project managers develop strategies to maximize support for the program and minimize opposition.

What kinds of information could be collected and analyzed during

**Table 5**

**ACTIVITIES RELATED TO THE INITIATION PHASE OF THE PLANNED CHANGE PROCESS**

1. Recognize a need for a new program to cause the SCDE* either to expand its mission or better fulfill an existing mission.
2. Obtain a complete, general description of overall goals for new program and rationale for program development.
3. Obtain a firm commitment from leaders of the SCDE and school district that identified goals are related to the mission of the institutions and that changes or innovations brought about in achieving these goals are desired for long-range institutional development.
4. Secure personnel to manage initiation activities.
5. Conduct an organizational analysis to identify various types of constraints and resource possibilities.
6. Refine the overall goal statement in light of organizational analysis and perform an "enabling goal analysis" to identify various programs needed to bring about the realization of broad inservice program goals.
7. Determine the SCDE's and the school district's responsibility for each enabling goal and the groups within each institution most appropriate for achieving each goal.
8. Identify roles to be played by interacting groups within the SCDE and the school district and build ownership and involvement in the program by these role groups.
9. Obtain consensus from each group that: (a) the overall goal is indeed in keeping with their long-term goals, (b) the role for which they have been identified is in keeping with their perceptions of their professional responsibilities, (c) they will cooperate in the development and implementation of the new inservice programs, and (d) they will perform duties in keeping with their understood roles and responsibilities.
10. Identify resources needed to fulfill each role by the SCDE and the school district and agree upon which organization is responsible for resources for administration, personnel, facilities, etc.
11. Specify a general plan for the design phase describing the role of each institution and involved role groups within each institution.
12. Secure services of personnel responsible for the management and implementation of the design phase.

*Schools, Colleges, and Departments of Education
Reprinted from *University Roles in Inservice Education: Planning for Change*, Washington, D.C.: AACTE, 1980.

the initiation phase? Table 6 includes a few of these initiation activities identified in Table 5 along with questions to illustrate the kinds of information that could be collected for each activity. The first activity suggests that if the goal is to develop a cooperative inservice education program involving a school district, a state department of education and a university, then project managers should assess the amount of general support available for the idea within each of the organizations. As a result of collecting this information, managers may discover that leaders of all groups involved are favorable toward the concept of expanding programs for inservice education, and that substantial numbers of individuals within each of the role groups are favorable as well. If there is opposition, the nature of this opposition should be assessed and a means to overcoming it planned. If no major opposition is observed, or if what does exist can be resolved, then managers would document the support available and what has occurred to this point, and would proceed to determine roles and responsibilities for each group related to the proposed program.

This second activity requires that project managers obtain initial financial, program and time commitments from each involved organization. Deans of colleges may be willing to provide service, but they must find a way to pay for the service. Districts may want the service, but realize they have no funds to pay for it. University faculty may agree that inservice programs are needed for school personnel, but they themselves may not be in favor of driving to schools to provide service. According to change models, these initial problems may cause long-term difficulties if they are not satisfactorily resolved.

Rather than finding local solutions to these immediate and obvious problems, external resources are often obtained. Using these external resources, deans may receive temporary, outside funds, new faculty may be hired who do not mind traveling to a school or even remaining at the school, and substitutes may be hired to free teachers to attend inservice sessions. Although temporary solutions are found for very real problems, the project is now in a weak position. Deans need not seek ways to fund programs locally, regular faculty may not need to travel to schools, and districts may not need to reschedule their programs and personnel to accommodate the new inservice program. Business returns to normal and the project continues unhampered. However, at the termination of external funds, these initial problems will more than likely resurface and will be contributing factors in the discontinuation of the program. Project managers should persevere when these initial prob-

Table 6

INITIATION PHASE ACTIVITIES AND RELATED QUESTIONS
THAT CAN BE USED TO EVALUATE PROGRESS
FOR EACH ACTIVITY

| Initiation Phase Activities | Evaluation Questions |
|---|---|
| 1. Recognize need to develop a cooperative program of inservice education for school personnel | 1. Does a substantial number of the following groups believe that inservice education for school personnel should be expanded?<br>a. state department of education employees<br>b. school district administrators<br>c. school based administrators<br>d. school teachers<br>e. university administrators, central and college level<br>f. university faculty<br>g. state legislators/community members<br>2. What is the exact nature of the need?<br>3. What support for an expanded program exists within each of the groups?<br>4. What potential financial support exists for an expanded program?<br>5. What opposition to an expanded program exists within each group both in principle and in resources? |
| 2. What role would each organization play in providing an expanded program of inservice education for school personnel? | 1. What would be the new financial and program obligations for each of the following groups:<br>a. state department of education<br>b. school district administrators<br>c. school-based administrators<br>d. school teachers<br>e. university central administrators<br>f. college administrators<br>g. college faculty<br>h. state legislators/community members |
| 3. How would new financial and program obligations change the existing role and mission of each institution and role group | 1. Does a substantial number of persons within each group agree to the required changes in their role and mission?<br>2. What are the positive positions of each group?<br>3. What are the negative positions of each group?<br>4. Can the negative positions be resolved?<br>5. Can each position be described and documented? |

| | |
|---|---|
| **Obtain Consensus From Groups That An Expanded Program Is Feasible** | |
| 1. Develop a complete, general description of overall goals for an expanded program of inservice education and rationale for program development | 1. Does a commitment exist from each role group that the goals and rationale identified are in keeping with their own institutional development plans?<br>2. Does there appear to be agreement within groups to the goals and rationale?<br>3. Document positive positions of each group<br>4. Document opposition within each group |
| 2. Obtain a firm commitment from leaders of involved organizations that the program goals and rationale developed are related to their missions and that any changes required are compatible with institutional development plans | 1. Does a commitment exist from each role group that the goals and rationale identified are in keeping with their own institutional development plans?<br>2. Are they willing to commit necessary changes in policy and procedures, resources, personnel, time, etc.<br>3. Can they make necessary commitments now?<br>4. When in the near future can they make necessary commitments?<br>5. What activities will leaders undertake in the near future to obtain commitments necessary to achieve the new program?<br>6. Will external resources be necessary at the present?<br>7. Are they agreeable to using external resources as a catalyst?<br>8. Document commitment<br>9. Document plans to obtain commitment from constituents for each organization<br>10. Document concerns, disagreements |
| **Obtain Consensus To Develop New Program And Commitment To Participate** | |
| 1. Conduct an organizational analysis to identify various types of existing constraints and resources | 1. Will the new program conflict with ongoing activities within any of the cooperating organizations?<br>2. Will the new program have available personnel, facilities, and financial resources?<br>3. What reorganization will be necessary to facilitate the new program?<br>4. What support exists for needed reorganization?<br>5. What opposition exists for needed resources?<br>6. Document support within each group<br>7. Document opposition within each group |

lems surface and should have each role group identify and describe the nature of problems which exist within their organization, obtain suggestions for how each problem might be remedied by each group, and help plan strategies to remove remaining barriers to program initiation.

Today, one rarely finds good information about the problems that have surfaced, the planned strategies and the administrators' willingness to work through initial problems. All the support manifested and the problems encountered should be documented. Local solutions to these problems should be described and a commitment sought from each organization to work toward resolving problems within their organization. If project managers are able to obtain necessary commitments, they should assess each organization periodically to determine whether problems that surfaced early are progressing toward resolution.

If project managers could obtain general financial and program commitments from each role group, ways in which the new program would change the existing role and mission of each organization could be analyzed and described. Leaders of each organization should participate in this process and their attitudes and perceptions should be assessed. Support for needed changes could be documented and opposition or disinterest assessed and described. Ways to resolve negative perceptions or disinterest and organizational constraints should be sought.

One way to evaluate the commitment of university leaders to the program is to review their activity related to necessary changes. For example, are deans of colleges willing to change their mission to include a major program of inservice education for area schools? Are they interested enough to petition their president or governing board for a firm commitment to initiate the program? Are they interested enough to seek necessary funds on a continuing basis from their legislature? In the past, many Teacher Corps project directors reported that their deans had not made any formal commitments to seeking continuing funds for college roles in inservice education, and a few reported that their deans were not interested in or informed about their programs. This type of attitude from university administrators does not demonstrate the level of commitment necessary to establish continuing university involvement in inservice. Temporary resources from external agencies are not likely to change these administrators' perceptions if the new program does not match their priorities for program development. Should deans or college administrators manifest disinterest or be uninformed about a program that is to be maintained within their institu-

tion, it would indicate that project managers had not accomplished their goals during the initiation phase of the project. Another source of material, the position papers or annual reports written by administrators, may be used to evaluate organizational commitment to a project. This material describes immediate and long range development plans for the institution. Project managers should review these documents carefully to determine how their project complements or competes with existing organizational agendas. If reports do not clearly illustrate ways in which the project complements institutional goals, project directors should inquire how the project relates to organizational plans. Experience has demonstrated that failure to obtain real commitments from administrators at the beginning of a project predicts failure for the project when external funds are terminated.

Project managers could use the information they collect during the first three initiation activities to determine whether they have consensus that the general program proposed is needed. Additionally, there should be an observable commitment from the organizations to work toward obtaining resources needed to implement and maintain the new program. If this commitment is not obvious from the documentation collected, managers should reassess their program idea or their strategy for obtaining commitment. Without commitment from the key groups, additional work on project development is not recommended. If commitment is obtained, project managers should develop a complete description of the inservice education programs proposed including goals, programs and institutions responsible for each program.

Evaluation procedures associated with this step are to determine whether: (a) all groups perceive they have adequate involvement and input into program planning, (b) each organization supports the program proposed and perceives that it will address the needs they identified earlier and (c) opposition that surfaces can be resolved. This information will help managers plan strategies to obtain firm commitments from associated organizations.

Actual progress should be compared to the plan or model developed which describes the nature and timing for each change required. This comparison between what actually happened and what was projected to happen will illustrate areas in which additional work is needed. When project managers decide that organizational activity demonstrates the verbal commitments received, they will be ready to proceed to the next step.

Given firm commitments from participating organizations, project managers can begin a thorough organizational analysis to iden-

tify various types of existing program constraints and resources. This activity requires a more in-depth analysis of the organization than was undertaken during previous activities. With a clear definition of the program developed earlier and sound commitment for the program from cooperating institutions, the path is clear to collect information. Some examples are: (a) whether the new program will conflict with existing programs and how; (b) whether financial, space and personnel resources will be available and if not how they can be obtained in the immediate future and on a long term basis; and (c) whether reorganization will be needed by any cooperating institutions and the exact nature of required reorganization. With this type of information, project managers can work with leaders within each group and develop strategies to facilitate the prescribed changes. It is at this time that external resources could be appropriately sought by project managers without affecting, or appearing to affect, the integrity of the planned program. Information collected about possible opposition could be assessed and strategies to overcome problems planned. Problems that do occur during this activity should be resolved prior to refining the overall goal statements and identifying various programs needed to realize the broad inservice program goals.

The type of analysis suggested here should be continued throughout the activities recommended for the initiation phase of the project. The three remaining phases of a change process should be used to plan project management activities, evaluate the success of the activities and document progress toward goals.

Documentation obtained about the change process will be useful at two different levels. First, the information will be critical for planning strategies to overcome possible opposition to implementing a new program that has potential for maintenance by local organizations. Second, the information can be used by researchers who study projects to learn more about: (a) interinstitutional cooperation, (b) policy and procedural changes within universities and schools, (c) problems that arise during program initiation, and (d) successful and unsuccessful strategies to promote change.

This chapter does not promote any particular change model but rather, suggests that a change model or framework be used to guide project planning and documentation. The information collected and compared to the intended framework by local project personnel and by researchers such as Louis, Rosenblum and Spencer (1978) would vastly increase our knowledge about the change process in educational settings.

Note that the analysis has only covered the first phase of the

model chosen. Other phases would be approached similarly. The specific goal chosen was the development of a program of inservice activities involving several agencies. Other goals, other activities, and other agencies and other change models could have been used for purposes of illustration, but the point would be the same, i.e., that project managers should make systematic use of the change model they select and that their actions and their internal, formative evaluation should be consistent with the logic inherent in the model.

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# Technical Assistance: Bridging Theory and Practice

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Technical assistance from a broad view could include an engineer consulting with a developing nation about building a dam. A broad definition of technical assistance would include many roles, functions, and a wide range of content, materials, and technology. This chapter will be limited to a discussion of the characteristics and activities of a person who is providing assistance to a project or program by disseminating the results of research adaptation to accomplish change in educational practice.

Specifically, Teacher Corps demonstration projects have a mandate to disseminate successful products, practices, and processes and to assist others who may wish to adopt and adapt these demonstrated improvements in new situations. A project may, at one time, be a client for the services of a change agent delivering technical assistance on a particular topic, and, at another time, it may provide a change agent to other clients who are implementing innovations based on the project's achievements.

Technical assistance is generally regarded as a function of experts in a particular technology, for example, agriculture specialists helping farmers or military advisors showing others how to use new kinds of weapons or equipment. Other specialists deal with processes, for example, helping a community to hold an election for the first time or showing members of an organization how to conduct interviews as part of a hiring procedure.

## TECHNICAL ASSISTANCE IN THE CONTEXT OF TEACHER CORPS

Teacher Corps recognizes the need for providing technical assistance to its many and diverse local projects. Like its international predecessor, Peace Corps, Teacher Corps has a primary mission to provide technical assistance (through its projects) to those in need, i.e., schools and educators working with children from low income families.

The assistance which projects provide to schools and communi-

ties takes many forms, and the assistance which Teacher Corps/ Washington provides to projects has also come in a variety of packages. Program specialists, teams of consultants, regional centers, geographic networks, clusters of projects with common thrusts, national and regional conferences, training institutes, printed materials, and many other resources have been made available to local projects.

This chapter concentrates on the kinds of assistance which can be provided by individuals (persons, consultants, specialists) to projects (groups of persons implementing a new program in an institution).

There is an expanding body of research and literature on the processes inherent in giving this sort of help. Science attempts to understand in order to predict and thereby control (or change) what happens. Although change in educational situations is not as predictable and controllable as we would like, desirable change can be assisted by persons who are skilled and experienced in helping others to accomplish innovations in educational settings by giving them technical assistance.

Some recent developments within Teacher Corps have influenced the role of technical assistance in that organization. Three task forces were organized in 1977 to consider the role of three concepts in the future conduct of projects, and in the functions of the federal office. The concepts were "demonstration," "evaluation," and "technical resources" (including technical assistance). The task forces brought together professionals who were specialists by training and experience in these topics as well as practitioners from the field who viewed the topics from the perspective of the day-to-day conduct of educational programs.

Subsequent to the final reports of these task forces (some say in spite of their recommendations) a number of contracts were let to provide services to local projects in connection with the developing of notions of demonstration, dissemination, evaluation, adaptation, technical assistance, and other concerns which are either explicit or inherent in Teacher Corps' legislation, regulations, and practices. This chapter draws on experience with both the task forces and the subsequent contracts.

The concepts mentioned above make eminently good sense in the abstract and they fit into an idealized scenario of the life of a project, as follows. A project is proposed to address a need for improved practice in a local setting, especially in relation to school climate or personnel development (as Dale Mann has pointed out, schools have a bottomless pit filled with such needs). The proposed project

would incorporate a college, a community, and schools. After funding, the proposers select staff; develop governance, policy, and management structure; plan strategies; implement an innovative program at the schools; document, evaluate, and validate it by demonstrating its effectiveness; disseminate its key ideas to others and help them to adopt and adapt the improvements by giving them technical assistance in their situation; meanwhile, institutionalizing the new program at the original target sites.

Unfortunately, unpredictable things can happen at each step along the way, and technical assistance may be needed by a project at any point. Electing a community council, organizing a policy board, hiring personnel, gaining access to teachers or entry to schools, fostering collaboration among individuals and agencies, introducing change in established institutions, reaching out to other potential audiences —all these, and many more, can be the precursors of bitter dispute, agonizing conflict, or amiable bungling.

Technical assistance is more useful before the barn burns than after. Many of the requests for site-specific assistance have come from project directors who seek to avert potential difficulties by making use of skilled outsiders who can facilitate the implementation of new strategies, different techniques, or innovative programs, or help negotiate the interpersonal and interagency compromises, arrangements, and agreements that can keep a project functioning.

*The Project's View*

There is another kind of technical assistance that is becoming increasingly important. It is needed in connection with the outreach activities of a demonstration project. When a demonstration has been successful and has attracted the attention of others, someone must help those who actually adopt elements from the demonstration to install and adapt them in the new situation. The assistance is not always given under ideal conditions. For example, when a teacher-training program called microteaching was being developed and tested at Stanford in the 1960's, the developers expended a part of most days showing visitors how microteaching worked. They often resented the time it took away from the research and analysis that they were interested in completing. When the activity required leaving the home base to carry the assistance some distance to the adopter's site, the sacrifice seemed greater.

Sometimes the technical assistance must be given by someone who is not ideally suited to this kind of exchange. Many competent researchers are not comfortable in a disseminator role. Other de-

velopers who *do* relish outreach activities may become overly enthusiastic and oversell or employ persuasive strategies that are not warranted by the potential outcomes of their product. Nevertheless, since most educational projects do not have the resources to hire experienced specialists to provide technical assistance to other programs which may use their ideas, some of the assistance must of necessity be given by inexperienced personnel. Some will also be provided by entrepreneurs. Many pitfalls can be avoided by careful planning. The kinds of accomplishments that a successful project might consider exporting include many possibilities. Some may take the form of *products* such as curriculum materials, training guides, or other printed resource material for students, teachers, or administrators. The exports might also be *processes* such as the procedures a project uses to reach decisions, interact with clients, or attend to political considerations. The component to be adopted or adapted might also be a complete *program*, for example, a special reading program for a multicultural or bilingual population, an interdisciplinary curriculum for a junior high school, or a training program in supervision skills for administrators.

A project needs to look at its elements, components, and activities, asking "Which of these are we likely to be sharing with others at some time?" A companion question should be "Who are the others that might use these ideas, products, processes, or programs?" The potential products and likely audiences can be listed on a sheet (see page 145). On the same page can be listed key resources—material and human. Do members of the staff have special talents or skills? Do they have access to other institutions or working relationships with influential persons, organizations, or agencies? What special qualities has the project or the staff that will be useful in an outreach effort?

Another factor needs to be considered when planning for outreach. What are the anticipated rewards and benefits for the importers and the exporters? What are the potential punishments or costs (in human as well as material resources)? Are there other potential negative consequences? These should be conjectured, hypothesized, and brainstormed during planning sessions. A milligram of prevention is worth a kilogram of cure.

The four sections of a chart like the one on the next page should be filled-in by more than one person connected with the project. Working separately and then combining the results may produce more insights than group thinking. At some point, several people need to interact about the ideas represented by the lists on the chart.

The following guidelines can help to stimulate a staff's imagination as they speculate and plan.

**Figure 3**
**Worksheet For Planning Outreach**

| Exportable Elements: | Potential Target Audiences: |
|---|---|
| Key Resources: | Potential Benefits: |

From *Preconference Organizer*
Teacher Corps, May 1980

GUIDE FOR USING WORKSHEET

1. Make a list of the elements or components of the project that have a potential for use by another project, school, community, university, or other target audience. Use the space provided on the worksheet. For example, it might be a curriculum innovation, an inservice delivery system, a special use of materials, or other processes, products, or practices that others can use.
2. Now list the potential target audiences that have been considered or might be considered by the project: for example, other schools, other school districts, a region of a state or territory, a state agency, a national audience.
3. List the resources, human and material, that are available, also the benefits or rewards that success will reap.
4. As a team, cross off the components and targets that are impossible, unlikely, not yet settled, or that are best not dealt with now.

5. Talk through the process that should take place as the implementation of one element is completed in immediate schools and community. Now extend the process to another target... other schools, other communities, etc. Consider how these will be reached and what should happen if things work out as hoped.
6. As time allows, work through other elements and other targets, adding to the list of resources and benefits when new ones occur to the team.
7. Agree on how ideas will be presented to sponsors, potential clients and colleagues.

Adapted from *Preconference Organizer*
Teacher Corps, May 1980

After the exportables have been chosen and a tentative strategy has been agreed on, it is time to consider the role that will be played by the technical assistance agent, assuming that dissemination efforts have attracted interest by potential adopters.

*The Role of the "Agent"*

Once a project has an outsider involved there is a natural sequence of decisions to be made. As Carey (1977) points out, there are four levels of activity that can be initiated:

1. Provide materials only.
2. Provide materials and a person to explain how they are used.
3. Provide materials, a person, and engage the adopters in a hands-on experience such as a simulation or workshop which includes role-playing.
4. Provide materials, a person, and engage the adopters in a hands-on experience which is the real thing, i.e., on-the-job training while the adopters are implementing the program at their place. An alternative would be to provide them with on-the-job experience at your place.

When the decision has been made to send a person, then the sequence of events for a change agent dealing with clients begins to unfold. In some instances, the first several steps will be taken during a single phone call. For example, A asks B to come over and do the same workshop that B did at C last month. Both client and agent know what is expected, the beginnings of a trust relationship have been established by B's performance last month at C, and A has already made a tentative adoption or adaptation decision. "Send materials, send person, and conduct activities" sounds a bit like "have tux, will travel."

In other cases, the client may want the person to come in and work out an adaptation before any presentation is made to the target group. Now the guidelines of a system such as the Florida Assessment and Diffusion System (FADS) need to be brought into play. The steps of the FADS* model are:

1. Identify client and establish relationship
2. Identify client's perception of present and ideal status
3. Achieve consensus by client group on present and ideal status
4a. Verify client's perceptions of present status
4b. Clarify and evaluate client's perceptions of ideal status
5a. Analyze present status
5b. Determine steps to ideal status
6. Specify discrepancies between ideal and present status
7. Client classifies discrepancies
8. Identify and list possible solutions
9. Implement initial evaluation of possible solutions
10. Client prioritizes solutions
11. Client selects tentative solutions
12. Analyze target population
13. Analyze characteristics of tentative solutions
14. Client selects final solution(s)
15. Design and implement research and development
16. Design terminal evaluation
17. Design information delivery program
18. Design persuasion program
19. Design action program
20. Implement and assess information delivery system
21. Implement and assess persuasion program
22. Implement and assess action program
23. Implement initial (formative) evaluation
24. Develop and assess reinforcement program for initial adoption
25. Develop and assess reinforcement program for maintaining adoption
26. Implement terminal (summative) evaluation
27. Report to target and client populations
28. Document and disseminate results of terminal evaluation

What then, are some of the things one needs to keep in mind in order to do as good a job as possible? What follows are some steps

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that many successful consultants take when they work with clients. Attending to each step completely would take many days or weeks, and most projects which are exporting their successes will not have that kind of time unless someone else pays for it. However, even in a brief period of technical assistance, the sequence of concerns must be taken into consideration lest something is ignored which could easily be dealt with early, but only with great difficulty later.

*Guidelines for Technical Assistance Agents*

1. Establish the relationship between the agent and the client(s). This might involve a formal contract or agreement in some cases or it might simply be an explicit understanding. A letter of understanding can help to make one's role and functions clear at the outset and avoid conflicts over "who's supposed to be doing what to whom" later on. It seems obvious that understandings and agreements ought to be easier to deal with than misunderstandings and disagreements, but we often think we know what other parties are expecting and learn later that they had something else in mind. Some relationships are best terminated rather quickly. Be sure that the expectations and goals of the agent and the clients are compatible.

2. Identify the current state of the client's operation and develop a commonly accepted description of the preferred state they hope to reach. This step is essentially a matter of "Here's where we are. There's where we want to be. How do we get from here to there?" An overly zealous agent may be tempted at this point to emphasize some aspect of a previous success without proper regard for important differences in conditions in the new situation.

3. Agree on the strategy that will be used to accomplish the tasks that appear to be necessary to reach the preferred state. Usually, several strategies will be considered and debated. Sometimes the factors that surface in a discussion of alternatives will lead to modification of the goal, the target audiences, or other aspects of the enterprise. Listing the advantages and disadvantages of several strategies will help to clarify and may lead to new insights. Important elements that need to be considered are: (a) who the target audience will be, e.g., teachers in general, certain teachers, certain students, community members, voters; (b) what will be accepted as evidence that the goal has been reached or the mission accomplished—this may be broken down into

several objectives or anticipated outcomes; (c) what constraints and obstacles must be overcome or dealt with to assure success; and (d) what are the potential benefits or rewards for the target audience *and* for the project. A form like the one illustated in Figure 3 will help. If there are several persons participating in the discussion, large sheets of newsprint permit all to have the ideas in front of them and allow the ideas to be retrieved and transcribed after the meeting.

4. Help identify (and provide, if necessary) the techniques (skills, procedures, materials, guidelines) the clients will need to carry out the chosen strategies.

*Change Agents as Teachers*

We are considering only those situations in which an individual is assisting a group. This makes the similarity between technical assistance (TA) and classroom teaching especially tempting. One form of teaching is the lecture. It is usually a mistake for a consultant to lecture to clients. One could probably use any of the other models of teaching (Joyce & Weil, 1980) as a basis for TA instruction, e.g., role-playing or synectics in which clients work through an analogy before attempting the real problem. Obviously, discussion as a strategy is almost unavoidable.

To avoid an extended analysis of the many models that have been developed, let us accept B. Othanel Smith's (1980) statement that there are just two basic models of teaching, heuristic and didactic, and further, this perspective can be applied to an adapted version of the definition of dissemination developed by the Dissemination Analysis Group or DAG (Fletcher, 1977).

1) *Spread*—the one-way casting out of information, products, ideas, and materials—"as though sowing seeds."

Project Target

This one-way communication is clearly didactic; like the lecturer or broadcaster, one needs to be sure the seeds are in order (advance organizers, clear prose, illustrations) before sowing.

2) *Exchange*—the two-way flow of information, products, ideas, materials, outcomes of research and development, effective, educational practices, and other knowledge that can be used for improvement of education in other settings.

Project Target

The two-way (or as DAG called it, "multi-way") flow of information is more heuristic or inductive. One can conceive of a client "discovering," or "inquiring" as the result of this interaction.

3) *Choice*—the consideration and selection among those ideas, materials, outcomes of research and development, effective educational practices, and other knowledge that can be used for the improvement of education.

Educational Agency

Even more heuristic, this stage shifts the spotlight totally onto the client....who may reject the option of adopting or adapting a favorite idea. We "hard sell" Americans find it difficult to accept the notion that an effective technical assistance effort might result in clients recognizing that our program is not for them. However, that should sometimes happen, if clients are given options and choices.

4) *Implementation*—the adoption, adaptation, and installation of improvements.

At this stage, the TA* may be either didactic; heuristic; or

*TA is also used for transactional analysis and teaching assistant. We take it to mean technical assistance, but it's your choice.

TA can mean *who* does it and *what* they do. It is both a noun and an active verb. As such, the technical assister technically assists, or the agent consults, in order to give TA.

somewhere between, as Table 7 indicates. Specific techniques may be taught by an agent using direct (didactic) instruction or the agent may go so far (heuristically) as Professor Harold Hill (*The Music Man* by Meredith Wilson and others) and let them learn to play by the "Think" method.

**Table 7**

**SOME DIDACTIC AND HEURISTIC FUNCTIONS OF TECHNICAL ASSISTANCE**

| Didactic Functions | Heuristic Functions |
|---|---|
| Informing clients of options | Identifying key concerns of clients |
| Instructing clients in specific techniques | Understanding clients' cultural and political milieu |
| Describing previous experience with products, procedures, and practices | Helping clients adapt someone else's previous experience to their situation |
| | Providing psychological therapy to clients by listening to their problems |

## CRITERIA OF COMPETENT TA PERFORMANCE

If TA is as closely related to teaching as has been suggested, then we should be able to apply commonly-accepted criteria of competent teaching performance to competent TA performance. In the following examples, "teacher" can be substituted for "TA", and "students" for "clients."

The competent TA gathers data about clients, analyzes and interprets the information to set objectives (which are consistent with the data about the clients, then makes consultation plans based on the objectives, executes a strategy consistent with the plans, makes use of superior knowledge of the subject being considered, manages and controls the situation, and accommodates individual differences among the clients).

A number of qualities of effective teaching performance can also be applied to TA such as the ability to:

**Table 8**

**Kinds of Organizations**

| | Autocratic Command System | Custodial (Maintenance) | Supportive (Motivational) | Specialist Division of Labor | Competitive Cold War | Collegial Collaboration |
|---|---|---|---|---|---|---|
| Depends on | Power | Economic resources | Leadership | **Specialized Competence** | **Winning** | **Cooperation** |
| Management based on | Authority | Material rewards | Support | Integration | **Glory** | **Togetherness** |
| Employee status | Obedience | Security | Performance | **Expert** | **Contestant** | **Responsibility** |
| Employee psychological result | Personal dependency | Organizational dependency | Participation | **Doing your thing** | Free-floating hostility | Self-discipline |
| Employee needs met | Subsistence | Maintenance | Higher-order | **Achievement** | **Victories** | Self-realization |
| Morale measure | Compliance | Satisfaction | Motivation | **Production** | **Ethnocentrism** | Commitment to task and team |
| Basic roles | Boss and Subordinate | **Benevolent Owner Grateful Subject** | **Partners** | Nominal peers Specialty-related | **Competitors** | Colleagues Task-related |
| Basic skills | Boss: Managing, Directing, Evaluating Sub: Listening, Doing, Reporting | **Majestic Wisdom and Judgment Obedience and Compliance** | **Serving as a Model or Good Example for Others** | Specialty and complementary | One-upmanship, Debating, Blaming and Compromising | Specialty plus interdisciplinary and collaboration |

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| | | | | | | |
|---|---|---|---|---|---|---|
| Nature of Relationship | Status-determined Formal, Impersonal | **Noblesse Oblige Paternalistic Allegiance** | **A Covenant** | Polite and respectful | Impersonal Distant Mistrustful | Open, Trusting Developing Informal, Personal |
| Power Distribution | Fixed: Boss has it all | **Controlled Bestowed** | **Shared, Delegated** | Nominal half-and-half All power in own Area | Nominal half-and-half Used to counter and cancel other | Nominal half and-half Flexible according to task need |
| Communication | **One Way** | **Up and Down** | **Across, Friendly** | Task focused Restrained | **Across, Hostile Distorted** | **Mutual** |
| How differences are Handled | Not recognized | **Mediated by the liege** | **Negotiated** | Avoidance Compartmentalized into discipline areas | To spar and wage war indirectly through task | In Open Used as information for problem solving |

Note: All words that are not in bold are from Maslow (1971), attributed to Keith Davis in *Human Relations At Work*, 3rd. edition, 1967; and Grinnell (1979). Words in bold are insertions by the author, and the term "free-floating hostility" is from Friedman and Rosenman (1974).

- keep clients at task
- exude clarity and enthusiasm
- be organized and businesslike
- use indirect behaviors (accept feelings, give praise and encouragement, acknowledge and use clients' idea rather than just lecture and give directions)
- avoid harsh, negative criticism
- employ a variety of strategies and activities
- use a variety of levels of discourse to reach a range of levels of cognition.

We could go on. The list makes sense for identifying the individual who is likely to experience success giving technical assistance to clients. It is interesting to note that many studies of organizational development (OD) interventions do not analyze the characteristics, qualities, or styles of the OD consultants.

*Styles of Technical Assistance*

There is a popular campfire song about a hero who could "sing like Caruso both tenor and bass and harass the foe from the rear" and do most anything. TA, when it is good, is like that. The successful practitioner will employ both didactic and heuristic teaching strategies, will use both sides of the brain, e.g., will be articulate, logical, take matters up in a reasonable sequence, be on time, be orderly, but will also be intuitive, creative, metaphoric when appropriate, and serendipitous. S/he will be Type A (Friedman & Rosenman, 1974) when a sense of urgency is needed and Type B when more tranquility would help.

At times Theory X (MacGregor, 1960) may be appropriate, but most often Theory Y appears to be more suitable. Maslow (1971) has outlined the theories and organizational styles, adding one of his own, Theory Z, which might require self-actualized clients and a transcendent agent. A more pragmatic classification of the ways of working together has been stated by Grinnell (1979) in a paper prepared for the Teacher Corps Site Specific Technical Assistance Panel. Table 8 (adapted from these writers) outlines the characteristics of several ways of dealing with others.

The collaborative mode has been used (or attempted) frequently by trainers and consultants who have used techniques advocated by the National Training Laboratory (NTL). Grinnell's (1979) experience with the medical profession led him to observe that the specialist paradigm appeared to be frequently used. He also notes that universities often operate in keeping with the specialist model.

Universities also display aspects of the cold war model when departments compete for resources. Arends and Lovell (1980) describe a project within a university which illustrated a cold war situation. Ho (1980) refers to such situations as mirroring what Cohen, Marsh and Olsen (1972) have called "organized anarchy."

Persons who give TA have a wide range of styles, strategies, and ideologies to choose from: they can be humanistic, behavioral, authoritarian, existential, entrepreneurial, inquisitive, acquisitive, ascerbic, or touchy-feely. Several archetypes have been evident in education. One is the "warm tub" consultant who figuratively, if not literally, gets the clients to sit together in a warm tub and hold hands until their problems soak away. The "umbrella" specialist convinces us that our greatest fear is the rain and just happens to have a truckload of bumbershoots parked outside. The "Sears catalog" consultant diagnoses the situation and then bundles up selected items from a warehouse of modules to create a new "individualized" package for the client—with a personalized binder (Acheson, 1977).

Some other archetypes can be identified among the many agents who operate in education. There may be as many as 250,000 who deliver some sort of inservice training or development activity.* One prevalent specimen is the "inarticulate expert." This one knows a lot about the topic but has trouble communicating with the practitioners who could use *some* of the expert's knowledge but don't need to hear about *all* of it. Another one frequently spotted is the "glib amateur." This one is the opposite of the first. Like the genre of baseball players known as "Goodfield Nohit" or Charley Brown's statement, "We don't win any ball games, but we have some interesting discussions," this agent is nice to have around but lacks substance and scoring potential.

Then there is the irrepressible, omniscient soul who goes to a school to work with teachers, and, while there, tells the principal how to run the school, or announces in a bar (crowded with loggers), "Everyone thinks they're professionals these days—even bartenders and loggers." The last example comes from an individual whose current title is best described as "formerly in labor negotiations."

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**Issues to Face*, ISTE Report 1976, Bruce Joyce and others.

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*Knowing Your Clients*

An agent who plunges ahead with a preconceived plan or strategy for the clients without learning something about "where they are" and "what they are about" runs the risk of coming down with a severe case of "functional fixedness," i.e., proceeding on the basis of a single hypothesis— which happens to be wrong (Bruner, 1966). Avoiding this malady requires that the agent is able to listen as well as talk. After listening, one needs to be able to analyze, interpret, synthesize, and predict to the satisfaction of the client group.

A consultant or "facilitator" from outside an organization can play a role that would be virtually impossible for anyone inside. Often, what the group needs most is insight which cannot come easily to those caught up in the internal dynamics.

A simple way to remember the key factors in the consultative task is to use the word, COST.

C stands for *concerns*. In discussing the present state and the ideal state of the clients' operation, the agent is essentially finding out what they are most concerned about. When there are several members of the client group, their concerns will probably not be identical. One function of a skillful consultant or agent is to draw out the common concerns most of the clients share in relation to the topic being addressed. For example, in several instances consultants skilled in organizational development have helped federally sponsored projects at major universities get themselves organized. Now these projects had staff members who were themselves knowledgeable about organizations, but an outsider was able to help them see themselves and their respective roles more objectively and, consequently, to function more productively in planning meetings.

O stands for *objectives*. Getting the clients to describe where they want to get, in observable terms, is a crucial step on the path to getting there. When the clients' goal is similar to the one the agent has successfully reached in the past, it is useful to help them state what the desirable outcomes will really look like. An agent should be cautious about putting words in their mouths, however; their situation is not exactly the same as the previous case.

S is for *strategies*, i.e., "How are we going to get there?" Considering more than one possibility is a good idea. Even though the agent is an "expert," having successfully carried out one approach, there may be modifications or alternatives that would be better in another situation.

T is for *techniques*. These are the nitty-gritty procedures, skills, and know-how that are necessary to make the strategy work. Direct

teaching is often required to pass these on to clients. One usually thinks of technical assistance, e.g., showing clients how to repair tractors, as this kind of help, i.e., as technology.

*Technical Assistance and Technology*

Putting technology into its relationship between theory and practice can be illuminated by a metaphor suggested by Lieber (1942) in *The Education of T.C. Mits* using a five story house.

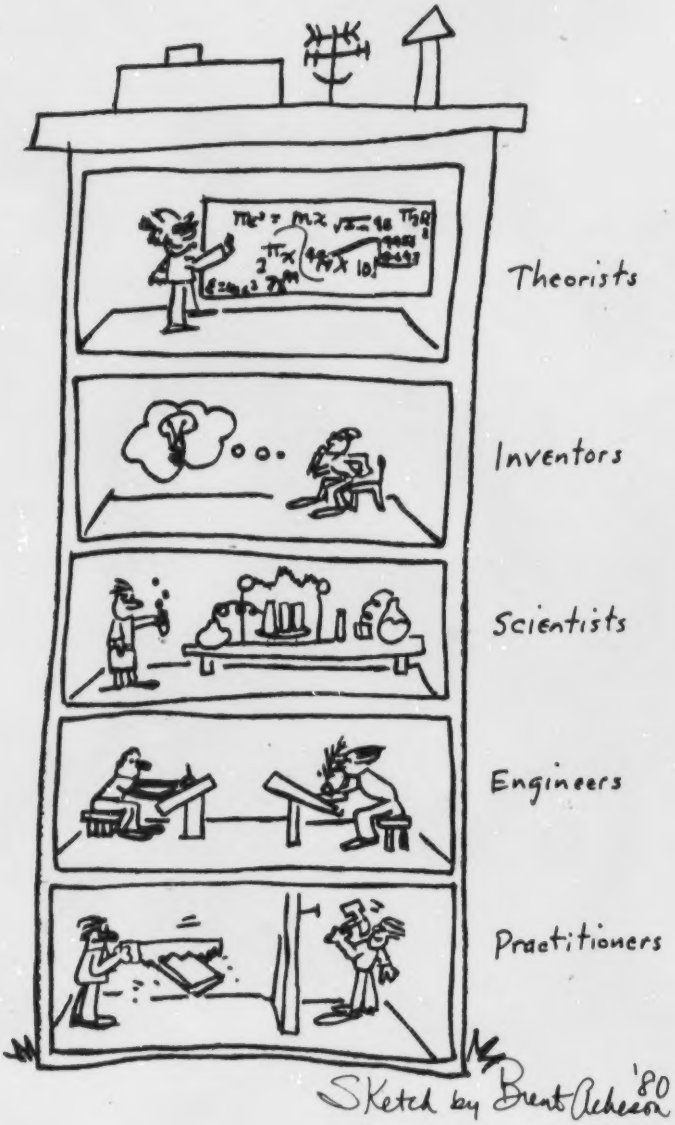
On the top floor, along with the theorists are abstract artists, pure mathematicians and philosophers. On the fourth floor are the innovators and inventors; on the third the *researchers* and scientists; on the second, the engineers (and *adapters*), and on the street floor are the practitioners. Technical assistance is often a link between the engineers, adapters, or developers and the practitioners.

Not all TA is from the second floor to the first, some industries employ special people to help scientists communicate with engineers (third floor to second). Education has not been noted for its excellence in engineering, with some exceptions. One of the factors in the success of the Direct Instruction Model in the Follow Through evaluations was the "... careful quality control of training procedures, teaching processes, and child progress. A variety of procedural manuals, observation tools, and child assessment procedures have been developed to insure quality control" (Becker, 1978). Technical assistance from practitioners to practitioners is often the most effective.

*Schools of Thought*

For a humanistic educator, the works of Maslow, Rogers, May, Buber spur more enthusiasm than Skinner, Bijou, Keller, Becker, and Englemann. One of the areas of need is for second floor work to develop materials and technical assistance procedures for disseminating and diffusing how to operationalize humanism. If this is not done, then lack of quality control will preordain the movement to the fate of the progressive education movement.

The paradigm for effective technical assistance in education has tended to be based on cooperation rather than competition, on humanism rather than behaviorism or Freudian concepts. It has also emphasized group dynamics and human relations principles derived from the work of Lewin, Lippit, MacGregor, Argyris, and others of that persuasion. The evidence from large scale studies such as those made of the various Follow Through strategies by Abt, House, Glass, and others (Becker, 1978) leads one to conclude that


Theorists
Inventors
Scientists
Engineers
Practitioners
Sketch by Brent Ashcroft '80

when the outcomes are specified, e.g., improved student growth on standard tests, then a direct, didactic, prescriptive, behavioral approach (both as a strategy for teachers and as a mode for delivering technical assistance to them) is probably superior to a client-centered, heuristic, collaborative modus operandi.

The examples used by advocates of direct instruction tend to emphasize the value of saving learners from laissez faire situations by providing structure and systematic reinforcement. The person-centered proponents prefer to use examples of learners being rescued from coercive, regimented, authoritarian bondage. This debate is not productive; like the two toddlers arguing whether a spoon is a "foon" or a "poon," we need to transcend the tendency to polarize positions which are both only partly correct.

A case in point arises in the practical application of TA principles. One carefully documented handbook (FADS, 1974 ) recommends, "While the client group works toward consensus, the agent must not allow one subgroup to dominate the discussion." The implicit assumption is that consensus is desirable and that something organizational development (OD) specialists call "ownership" will lead to a more satisfactory solution.

Suppose a "transcendent" (Maslow, 1971) agent sees that a subgroup has a solution that will save the larger group from a predictable self-destruction consensus solution. Should not the agent throw away the book and join the minority? Or, assume that the agent is working with a group which has adult members at the lowest level of ego development—the self-protective stage—characterized by manipulative, opportunistic behavior (it is not difficult to find such cases). Should not the agent move away from collaborative striving for consensus if, as Pine (1980) suggests, "poor mental health may be more infectious than good mental health?"

Another assumption inherent in most "systematic" approaches to TA is that management by objectives (MBO), PERT charts, Gantt charts, and other devices fed by empirical data will lead to efficient, effective, and lasting change. Perhaps education is too prone to accept models and language from other endeavors. It may make sense to have charts that indicate what, where, and when things need to come together logistically to assemble a plane or establish a new military base. It does not necessarily follow that we can set a date for when a group of teachers will be persuaded that a new idea is better than an old one or that they are ready to "implement" (really use) an "innovation" (different program). Could we survive without the words "implement," "innovate," "facilitate," and "conceptualize?"

Hamilton and Parlett (1977) developed the notion that agents of educational change have adopted the botanical/agricultural model and almost all evaluations of innovation in education have followed this traditional paradigm. They suggest another model derived from social anthropology, psychiatry, and participant observation research. There appears to be a trend among educational researchers to accept (or at least to look at) "ethnographic" evidence along with experimental data.

Another insight can be gained from a Bill Cosby monolog in which he plays the part of the referee for the American Revolutionary War and admonishes one side to wear red coats and march in straight lines while the other side may wear buckskin and hide behind trees. Educational evaluators have marched the straight lines of statistical design (well, some are a *bit* crooked) while investigative reporters, columnists, senators, and admirals have been making "impressionistic" surveys of how we are doing. A stunning statistic such as "We trained 20 teachers for inner city work and 18 of them took jobs in the inner city; moreover, 14 of them were still there the second year" might be more convincing than a set of attitude scores (pre and post, of course.)

## CONCLUSIONS

So, what conclusions can one draw from these several perspectives on the practical aspects of technical assistance agents of change in education? Here are several; there are, no doubt, a number of others.

1. The agent must be able to see the situation from the perspective of the client(s). When there is more than one client, then the agent needs to be aware of factions and decide whether to attempt mediation, choose sides, or go home.

2. Collaboration may not be the only (or best) mode of accomplishing change. Teacher Corps, in its regulations, virtually mandates collaborative decision-making as the means of governance for a project, i.e., it autocratically requires democracy. Through skillful technical assistance, an agent may be able to help clients cope with dilemmas like this one.

3. Helping clients to clarify where they want to go and how to get there is one of the key tasks that an agent can perform.

4. The personal qualities, capacities, and experience of an agent will profoundly affect what can be done for clients.

5. In addition to the existing wisdom in educational literature about technical assistance (which tends to come from NTL at Bethel, Maine), we need to be aware of some powerful concepts that come from other educational camps. Behavior-theory-based approaches, theories about the levels of ego and moral development, and the realities of political action can also affect an educational agent who attempts to effect (or aid) change and thereby becomes a psychological and political agent.

6. Technical assistance as a concept has been adapted by education from other endeavors, such as engineering, in which it is possible to give technological aid, e.g., teach "developing" societies to use bigger and better machines. Technical assistance in education, as discussed here, inevitably gets beyond the hardware and software of school improvement or staff development and interacts with the cultural, social, political, and ideological milieu of the clients.

7. The attributes of good teaching apply to the successful conduct of technical assistance. Time on task, clarity, surgence*, empathy, being organized and prepared, using heuristic as well as didactic strategies, all these currently-accepted aspects of teaching effectiveness (plus a number of others) are important qualities of the accomplished technical assistance person.

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*David G. Ryans in *Characteristics of Teachers, 1960*, isolated three important factors: warm/sympathetic, organized/businesslike, and surgent, i.e., imaginative, enthusiastic, energetic.

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# APPENDIX

Scale 1 — Teachers
Scale 2 — Project Administration
Scale 3 — IHE
Scale 4 — Institutionalization
Scale 5 — LEA
Scale 6 — Collaboration
Scale 7 — Miscellaneous

## An Interpretation

Analysis of the many documents prepared by research adaptation projects indicates some trends that are congruent with the ideas and recommendations expressed in this book.

The projects, all university-based, began with mixed notions of what constituted a tenable research adaptation enterprise in 1975. Some saw an opportunity to do research *on* schools, others wanted to become involved *in* schools, few recognized that they would achieve success in any of their goals only if they worked *with* school people on common concerns. Cycle 10 project reports reflected a number of adaptations once this fact was realized. Goals were modified, strategies altered, research designs reconstructed, and evaluation instruments were scrapped, substituted, or revised.

Given the wide variation in project types, it becomes difficult to make generalizations. For example, some were based in major universities where strong emphasis on research affected faculty members; others were based in institutions where tradition emphasizes teacher training. Some projects used field-tested programs and products with which they had considerable previous experience; others worked with materials and procedures which were relatively new and still under development. From the perspective of the RD&D continuum, some projects concentrated on research, some on development activities, while others were primarily disseminating mature products and programs.

School sites varied even more than the colleges and the universities. Spanning Oregon to New England and north to south, school sites varied from inner cities of the industrial North, to towns in the rural South. Accordingly, the school populations varied greatly, some were a mix of social classes and ethnic backgrounds, while others were predominantly from one cultural group.

Another source of variation among projects was the predisposition of key project personnel in the target schools. A charismatic project director or an immovable school principal may have had more effect on the adoption of an innovation than, say, the inherent quality of the innovation (i.e., "change is virtue") itself. Teacher attitudes toward experimentation and change profoundly affect the chances for intervention that will make a difference. The cultural, social, and political climates of the communities are also major determinants of readiness for change. There are still some school board members who regard inside plumbing as an unnecessary frill.

Given all these factors most of the variance in statistics purporting to show success or failure in projects could be discounted. Despite that, the following are some hypothesized explanations for the differences in project directors' response to the survey.

Directors who were in Cycle 10 but not 12, appear more sanguine about their experience. They may have had longer to forget the trials and travails of project governance, management, and operation. They may have been positive-minded in recalling the accomplishments. At the same time, they could also look at what achievements were still in place almost three years later.

Those projects funded for **both** 10th and 12th cycles tended to be a full point below 10th cycle means. Perhaps they had longer to become disillusioned with their chances to cause lasting change, and they were still close to the fray. They probably were more cautious about claiming success where it might not yet exist—what researchers call Type I error. They may have also committed a Type II error, failing to recognize differences that did exist.

Projects from the 10th and 12th cycles and 11th cycle expressed less satisfaction with their accomplishments in institutionalization than did the 10th only and 12th only groups. Perhaps the projects funded for 10th and 12th cycles had learned enough by 1977 to help the new 12th cycle projects avoid mistakes, but not enough in 1976 to have been more helpful to 11th cycle directors.

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**Teachers**—Scale 1

| | N = 3 10th | N = 5 10th & 12th | | N = 5 11th | N = 5 12th |
|---|---|---|---|---|---|
| • Did the teachers involved in the project modify their expectations? | 4.0 | 3.4 | 3.2 | 3.6 | 3.6 |
| • Did the project impact the LEA teacher? | 4.3 | 3.0 | 3.8 | 3.8 | 4.4 |
| • What impact did the research adaptation project have on the teachers? | 3.6 | 3.0 | 3.4 | 3.6 | 4.0 |
| • Did teachers adapt practices of the project to the reality of their classrooms? | 4.3 | 3.8 | 4.4 | 3.6 | 4.2 |
| • Did teachers assimilate project methods, technologies, or ideas into their own practices? | 4.3 | 3.2 | 3.8 | 3.2 | 4.0 |
| • Did research adaptation as a concept help improve instruction in the involved classrooms of the LEA? | 3.6 | 2.6 | 3.6 | 3.6 | 1.8 |
| • Did teachers in the project feel a sense of ownership? | 4.3 | 2.8 | 3.4 | 3.4 | 3.4 |
| • Were the teachers able to accurately identify inservice needs? | 4.3 | 2.6 | 3.6 | 3.4 | 4.0 |
| • Did teachers with 10-15 years experience actively participate in project objectives? | 4.3 | 3.2 | 3.2 | 3.4 | 4.0 |
| Total $\bar{x}$ | 4.1 | 3.1 | 3.6 | 3.5 | 3.7 |

**Project Administration**—Scale 2

| | N = 3 | N = 5 | | N = 5 | N = 5 |
|---|---|---|---|---|---|
| | 10th | 10th& | 12th | 11th | 12th |
| • Did the project change its original goals and mission? | 3.3 | 2.6 | 2.4 | 3.0 | 2.8 |
| • Did the project experience change in its administrative structure? | 3.3 | 3.4 | 2.4 | 3.0 | 1.8 |
| • Was the project modified from its initial mission? | 4.0 | 2.8 | 2.4 | 3.8 | 3.2 |
| • How satisfied were you with the Teacher Corps project? | 3.6 | 3.2 | 4.0 | 3.6 | 4.2 |
| • Did you find the Teacher Corps project professionally rewarding? | 4.3 | 3.6 | 3.8 | 3.6 | 4.6 |
| • Did you find the Teacher Corps project personally rewarding? | 4.3 | 3.6 | 3.8 | 3.0 | 4.4 |
| Total $\bar{x}$ | 3.8 | 3.2 | 3.1 | 3.3 | 3.5 |

| **IHE**—Scale 3 | N = 3<br>10th | N = 5<br>10th & 12th | | N = 5<br>11th | N = 5<br>12th |
|---|---|---|---|---|---|
| • Did IHE members involved in the project modify their expectations? | 4.6 | 3.0 | *2.8* | 3.2 | 3.6 |
| • Did research adaptation as a concept help improve practices of the IHE? | 3.0 | 3.2 | *2.8* | 3.0 | 2.4 |
| • How supportive of your project was the IHE's administration? | 4.3 | 4.0 | *4.0* | 3.4 | 4.2 |
| • How supportive of your project was the IHE's total faculty? | 3.0 | 2.2 | *2.4* | 3.4 | 2.4 |
| • Did the research adaptation project impact the IHE faculty? | 4.0 | 3.0 | *3.0* | 3.0 | 2.0 |
| • Were IHE faculty able to accurately identify inservice needs? | 4.0 | 3.8 | *4.4* | 2.6 | 3.2 |
| Total $\bar{x}$ | 3.8 | 3.2 | *3.2* | 3.1 | 3.0 |

| **Institutionalization**—Scale 4 | N = 3<br>10th | N = 5<br>10th & 12th | | N = 5<br>11th | N = 5<br>12th |
|---|---|---|---|---|---|
| • Did the project shed its "special" status and replace practices existing before the project? | 4.0 | 3.0 | *3.2* | 2.6 | 3.0 |
| • Did the LEA or the university incorporate features of the project into its instructional program? | 4.0 | 3.0 | *3.4* | 2.6 | 3.4 |
| • Did the LEA or the university incorporate features of the project into its budget process? | 3.3 | 1.6 | *1.6* | 2.2 | 2.2 |
| • Did the LEA or the university incorporate features of the project into its personnel allocation? | 4.0 | 2.4 | *2.6* | 2.0 | 2.2 |
| • Did the LEA or the university incorporate features of the project into its support activities? | 4.0 | 2.2 | *2.6* | 1.8 | 3.0 |
| • Did the LEA or university incorporate features of the project into its facilities assignments? | 4.0 | 1.8 | *1.8* | 1.8 | 3.0 |
| Total $\bar{x}$ | 3.9 | 2.3 | *2.5* | 2.2 | 2.8 |

**LEA**—Scale 5

| | N = 3 10th | N = 5 10th& | *12th* | N = 5 11th | N = 5 12th |
|---|---|---|---|---|---|
| • Did the school's administration modify its expectations? | 4.3 | 2.8 | *2.8* | 3.0 | 3.6 |
| • Have project generated changes been maintained at the LEA? | 4.0 | 2.6 | *3.0* | 2.6 | 3.4 |
| • How supportive of your project was the school's administration? | 4.3 | 3.6 | *3.8* | 2.4 | 4.2 |
| • How supportive of your project was the school's total staff? | 4.0 | 2.6 | *2.8* | 3.6 | 3.0 |
| • What impact did the schools or district have on the project? | 4.0 | 3.4 | *3.2* | 3.6 | 4.2 |
| Total $\bar{x}$ | 4.1 | 3.0 | *3.1* | 3.0 | 3.7 |

| **Collaboration**—Scale 6 | N = 3<br>10th | N = 5<br>10th&12th | | N = 5<br>11th | N = 5<br>12th |
|---|---|---|---|---|---|
| • Did the school and university work together as a team? | 2.6 | 3.4 | *4.0* | 3.6 | 4.0 |
| • Were the relationships between the LEA and IHE changed? | 4.6 | 2.4 | 2.2 | 3.4 | 3.6 |
| • Were these changes (if any) beneficial? | 4.6 | 2.8 | 3.2 | 3.4 | 4.2 |
| • Were inservice activities generally collaboratively developed and implemented? | 4.6 | 3.6 | *4.0* | 3.2 | 3.4 |
| Total $\bar{x}$ | 4.1 | 3.1 | 3.4 | 3.4 | 3.8 |

| **Miscellaneous**—Scale 7 | N = 3<br>10th | N = 5<br>10th & 12th | | N = 5<br>11th | N = 5<br>12th |
|---|---|---|---|---|---|
| • As compared with other Teacher Corps support systems, did the Research Cluster activities help in implementing the project? | 4.6 | 3.6 | 3.6 | 4.0 | 3.2 |
| • Did research adaptation as a concept help improve the community component? | 2.6 | 3.0 | 2.2 | 2.8 | 1.2 |
| Total $\bar{x}$ | 3.6 | 3.3 | 2.9 | 3.4 | 2.2 |